XR-C610/C620

SERVICE MANUAL

US Model
XR-C610/C620
Canadian Model
E Model
XR-C610

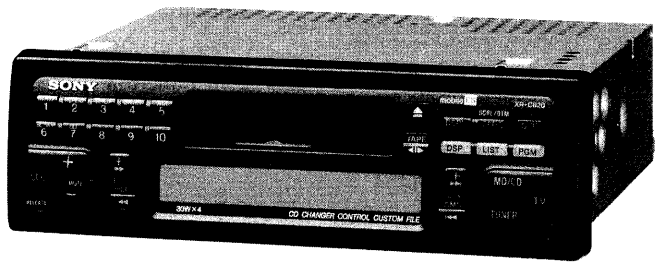


Photo : XR-C620

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	XR-C410
Tape Transport Mechanism Type	MG-50B3-39

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US MODEL)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
12 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1% total harmonic distortion.

Other Specifications

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.08 % (WRMS)
Frequency response	30 – 20,000 Hz
Signal-to- noise ratio	

Cassette type	Dolby B NR	Dolby C NR	Dolby NR off
TYPE II, IV	67 dB	73 dB	61 dB
TYPE I	64 dB	70 dB	58 dB

Tuner section

FM

Tuning range	US, Canadian model : 87.5—107.9MHz E model : FM tuning interval : 50kHz/200kHz switchable 87.5—108.0MHz (at 50kHz step) 87.5—107.9MHz (at 200kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

—Continued on next page—

FM/AM CASSETTE CAR STEREO
US, Canadian Model

FM/MW/SW CASSETTE CAR STEREO
E Model

SONY®

使用前に取扱説明書もお読みください
Refer to the separate documents

AM (US, Canadian model)

Tuning range	530 – 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	30 µV

MW (E model)

Tuning range	MW tuning interval: 9kHz/10kHz switchable 531—1,602kHz (at 9kHz step) 530—1,710kHz (at 10kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	450kHz/10.71MHz
Sensitivity	35µV

SW1, 2 (E model)

Tuning range	SW1: 2,940—7,735kHz SW2: 9,500—18,135kHz (except for 10,140—11,575 kHz)
Antenna terminal	External antenna connector
Intermediate frequency	450kHz/10.71MHz
Sensitivity	35µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	30 W × 4 (at 4 ohms)

General

Output lead	Power antenna relay control lead Power amplifier control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 58 × 176 mm ($7\frac{1}{2} \times 2\frac{3}{8} \times 7$ in) (w/h/d)
Mounting dimension	Approx. 182 × 53 × 156 mm ($7\frac{1}{4} \times 2\frac{1}{8} \times 6\frac{1}{4}$ in) (w/h/d)
Mass	Approx. 1.2 kg (2 lb. 10 oz.)
Supplied accessories	Power connecting cord (1) Cord with connector (AUDIO) (1) Mounting hardware (1 set) Front panel case (1) Rotary Commander RM-X2S (XR-C620)

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL

Button Locations 3
Setting the Clock 3
Cassette Player Operation 4
Radio/TV Reception 4
Station Memo Function 6
Other Functions 6
DSP Function 7
Connection 11

2. DISASSEMBLY

2-1. Sub Panel 13
2-2. Heat Sink 13
2-3. Mechanism Deck Block 14
2-4. Main Board 14
2-5. Front Back Panel 14

3. ASSEMBLY OF MECHANISM DECK

3-1. Installing the Loading Gears 15
3-2. Installing the Reel Bracket 15
3-3. Installing the Mode Lever and Pinch Levers 16
3-4. Installing the Cassette Housing 17
3-5. Installing the Loading Lever 17
3-6. Positioning the Loading Levers 18
3-7. Installing the Gear (Loading F) 18

4. MECHANICAL ADJUSTMENTS 19

5. ELECTRICAL ADJUSTMENTS

Deck Section 19
Tuner Section 20

6. DIAGRAMS

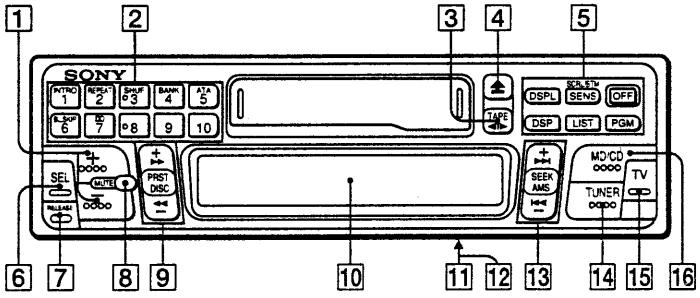
6-1. IC Pin Description 23
6-2. Block Diagram 25
6-3. Circuit Boards Location 28
6-4. Printed Wiring Boards—Main Section— 29
6-5. Schematic Diagram—Main Section— 33
6-6. Schematic Diagram—Panel Section— 37
6-7. Printed Wiring Board—Panel Section— 41
6-8. Semiconductor Lead Layouts 44

7. EXPLODED VIEWS

7-1. Chassis Section 50
7-2. Front Panel Section 51
7-3. Mechanism Deck Section 52

8. ELECTRICAL PARTS LIST 53

Button Locations



EN

Refer to the pages in ● for details.

1 (volume/bass/treble/balance/fader control) button ❻⓫⓬⓳⓴㉑㉒㉕㉖㉗㉘

2 During radio reception:
Preset number buttons ❾

During tape/CD/MD playback:

INTRO button ❼⓬⓯⓰

REPEAT button ❽⓯

SHUF button ⓰

BANK button ⓳㉓

ATA (Automatic Tuner Activation) button ❽⓫㉒

BL.SKIP button ❽⓭

DD (Dolby B NR or C NR) button ❼⓭

During CD/MD playback:

Direct disc selection button ⓯
For CD changers: INTRO 1 – 10
For MD changers: INTRO 1 – BANK 4

3 TAPE/◄II► (playback/transport direction change) button ❼㉕㉖㉗㉙㉚

4 ≙ (eject) button ❼⓬㉚

5 DSPL (display mode change/time set) button ❻⓫⓮㉒

SCRL/BTM SENS (Sensitivity adjust/Scroll/Best Tuning Memory Function) button ❽❾⓮

OFF (OFF) button ❺❻❼⓬

DSP (DSP mode on • off/select) button ㉕㉖㉗㉘㉙

LIST (custom file mode select • set/list up) button ❿⓫⓬⓰⓱㉑㉒㉓㉘㉙

PGM (program memory function) button ⓲⓳⓴

6 SEL (control mode select) button ❻⓫⓬⓭⓲⓳⓴㉒㉓㉕㉖㉗㉘㉙

7 RELEASE (front panel release) button ❺㉛

8 MUTE button ⓬

9 PRST (preset) /DISC button ❼❾❿⓮⓯⓰

10 Display window

11 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT Switch" in the installation/Connections manual.

12 LINE-OUT/IN SELECT switch (located on the bottom of the unit)
See "LINE-OUT/IN SELECT Switch" in the Installation/Connections manual.

13 SEEK/AMS button ❼❽⓮

14 TUNER (radio on/band select) button ❼❽❾❿⓫㉕㉖㉗㉙㉚

15 TV (television/video Select) button ❼❽❾❿⓫㉚

16 MD/CD (disc play • MD/CD changer select) button ❼⓮⓯㉒㉕㉖㉗㉙㉚

EN

Setting the Clock

The clock has a 12-hour digital indication.

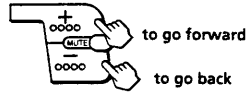
For example, setting it to 10:08

1 Display the time.
(Press the OFF or the DSPL button during unit operation.)

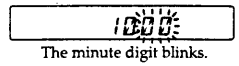
2 Press the DSPL button for more than two seconds.

The hour digit blinks.

Set the hour digits.

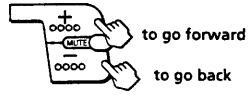


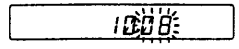
3 Press the ⏭ button momentarily.



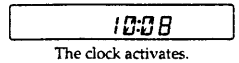
The minute digit blinks.

Set the minute digits.





4 Press the DSPL button momentarily.



The clock activates.

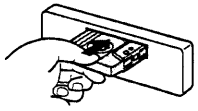
Note
If the POWER SELECT switch on the bottom of the unit is set to the B position, the clock cannot be set unless the power is turned on. Set the clock after you have turned on the radio, or started CD, MD or tape playback.

This section is extracted from XR-C620 instruction manual.

Cassette Player Operation

Listening to Tape Playback

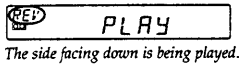
After inserting the cassette, playback will start automatically.



If a cassette is already inserted, press the [TAPE] button to start playback.
If you press during playback, the tape transport direction will change.

Indication of Tape Transport Direction

The side facing up is being played.



The side facing down is being played.

To stop playback,
eject the cassette by pressing the [⏏] button or press the [OFF] button.
Playback stops also when you select another source (radio, TV, CD or MD) by pressing the [TUNER], [TV] or [MD/CD] button.

Ejecting the Cassette

Press the [⏏] button.

To Fast-wind the Tape

Fast-forward

Rewind

To start playback during rewinding or fast-forwarding, press the [TAPE] button.

Playing a Tape Recorded in the Dolby B-NR or C-NR System

Press the [7] button when you want to listen to a tape recorded in Dolby B-NR or C-NR system. → "DD" appears on the display.

Each time you press the [7] button, the mode changes as follow:

→ Dolby B-NR → Dolby C-NR → Cancel →

Locating the Beginnings of the Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.

To locate the succeeding tracks

To locate the previous tracks

Up to nine tracks can be skipped.

If the blanks between the tracks are shorter than four seconds, or if there are noises, the AMS function will not work. Also, the unit may read long sections of low volume music or quiet sections on a track as blanks between tracks.

Searching the Desired Track — Intro Scan Function

Press the [INTRO] button during playback. → "INTRO" appears on the display.
The first 10 seconds of all the tracks are played. When you find the desired track, press the button once more. The unit returns to the normal playback mode.

Playing Tracks Repeatedly

— Repeat Play Function

Press the [REPEAT] button during playback. → "REP" appears on the display.
When the currently played track is over, it will be played again from the beginning.
To cancel this mode, press the button again.

Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the [ATA] button during playback. → "ATA" appears on the display.
When fast-forwarding or rewinding with the PRST/DISC button, the tuner will turn on automatically.

Skipping Blanks Automatically during Tape Playback — Blank Skip Function

Press the [BL.SKIP] button during playback. → "BL.SKIP" appears on the display.
Blanks longer than eight seconds will be automatically skipped during tape playback.

Radio/TV Reception

TV reception can be made only when the optional TV tuner unit is connected to optional TV monitor.

Searching for the Stations Automatically

— Automatic Tuning

1 Select the desired band.

FM1 → FM2 → AM1 → AM2 → FM1

TV → VIDEO1 → VIDEO2* → TV

* *Only when the TV moniter is connected and "VIDEO2" mode is selected.*

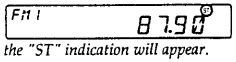
2 Press either side of the SEEK/AMS button to search for the station (automatic tuning).

For higher frequencies

For lower frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with a sufficient signal strength is tuned in,



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the [SENS] button momentarily to get the "LCL" indication.
Only the stations with relatively strong signals can be tuned in. The local seek mode functions only when the automatic tuning is in operation.

If FM Stereo Reception is Poor — Monaural Mode

Press the SCRL/BTM SENS button momentarily.
→ "MONO" appears on the display.
The sound will improve, but it will become monaural.

Tuning in by Adjusting the Frequency (Channel)

— Manual Tuning

1 Select the desired band.

2 Press and hold either side of the PRST/DISC button.
Release the button when the desired station is received.

For higher frequencies

For lower frequencies

PREVENTING ACCIDENTS!
When tuning in during driving, use the automatic tuning and the memory preset tuning instead of the manual tuning.

Memorizing Stations Automatically

— BTM (Best Tuning Memory) Function

This function selects from the currently received band the stations with the strongest signals and memorizes them in order of their frequency.

1 Select the desired band.

2 Press the SCRL/BTM SENS button for more than two seconds.
- When there is no preset number indicated on the display window, stations will be stored on all preset number buttons on the currently selected band.
- When there is a preset number indicated on the display window, the unit will store stations on all preset number buttons from the one currently displayed.

For example, when you select FM2 and preset number 3 is displayed,
the operation will start from preset number 3 on FM2, and will stop at preset number 10 on FM2.

Note
During TV reception, the unit memorizes up to ten receivable stations in order of the channel numbers.

Memorizing Only the Desired Stations

1 Select the desired band.

2 Tune in the station which you wish to store on the preset number button.

3 Keep the desired preset number button (INTRO 1 to 10) pressed for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears on the display window.

Up to 10 stations on each band (FM1, FM2, AM1, AM2 and TV) can be stored on the preset number buttons in order of your choice. Therefore, 20 stations can be memorized each on FM and AM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

1 Select the desired band.

2 Press momentarily the preset number button on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized again. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

Press either side of the PRST/DISC button momentarily to receive in order the stations stored in the memory (Preset Search Function).

Press momentarily

1 → 2 → ..... → 9 → 10 → 1 → ...

Press momentarily

1 → 10 → 9 → ..... → 2 → 1 → ...

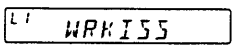
Searching for the Memorized Stations

— List-up Function

Displaying on the display window of the master unit:

Note
When the optional TV monitor is connected, the information will be displayed only on the monitor.

1 Press the LIST button momentarily.



Note
If the name of a station is registered, that name will be displayed. If the name of a station is not registered, the frequency of that station will be displayed. Refer to "Storing the Station Names in the Memory of the Tuner" for details.

2 Pressing the LIST button continuously will display in order the names of the stations on the currently received band.
Once the station name or the frequency has been displayed for over five seconds, the list-up function will be cancelled.

Turning off the Display
Press the DSPL button again.

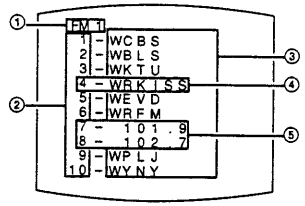
3 When you have found the desired station, press the PRST/DISC button to tune in the desired station.

Displaying the Contents of the Preset Memory

(with the optional TV tuner unit and TV monitor are connected)

Press the LIST button momentarily during radio/TV reception.

Example: When receiving the FM1 band



① **Band name**
② **Preset number**
③ **Registered station names*1**
④ **Currently tuned in station*2**
⑤ **Frequencies*1**

*1 *If the name of a station is registered, that name will be displayed. If the name of a station is not registered, the frequency of that station will be displayed.*
*2 *The name of the currently tuned in station will be displayed in magenta.*

Notes
- *It may take some time before all indications appear on the display.*
- *The TV screen does not come on during list display.*
- *The contents of the preset memory cannot be listed when the unit is in the simultaneous play mode (page 30).*

Turning off the Display

During radio reception, press the LIST button again.
During TV reception, the list display on the TV monitor will automatically turn off after a few seconds.

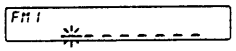
Station Memo Function

You can assign a name to each radio or TV station and store it in memory. The name of the station currently tuned in can be displayed on the display window. The steps below describe radio operation, but can be applied to TV operation as well.

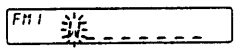
Storing the Station Names in the Memory of the Tuner

1 Tune in a station whose name you wish to register.

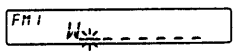
2 Press the LIST button for more than two seconds.
Enter the name edit mode.



3 Press either the + or − button to select the desired characters.



4 Press the SEL button after locating the desired character.



The flashing part moves to the next space on the right. Repeat steps 3 and 4 to enter the entire title. Up to eight characters can be used per station.

Notes

- *If you press the SEL button when the eighth character (farthest right character) is flashing, the flashing part goes back to the first character (farthest left character).*
- *If you wish to put a blank space after a character, select "_" (under-bar).*

5 Ⓐ To continue to the put titles onto the stations,

— press either side of the SEEK/AMS button momentarily to go to another station.

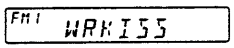
— press the TUNER button to select the next band.

Ⓑ To return to the normal radio/TV reception mode,

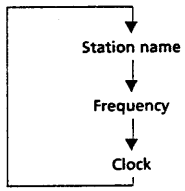
press the LIST button for more than two seconds.

Displaying the Registered Names

Press the DSPL button during radio/TV reception.



Each time you press the DSPL button during radio/TV reception, the display on the display window changes as follows:



** If the name of a station is not registerd, "NO NAME" will appear on the display window.*

Changing a Registered Name

Tune in a station whose name you wish to change, and perform steps 2 to 5 on this page to enter the name edit mode.

Erasing a Registered Name

1 Tune in any station.

2 Press the LIST button for more than two seconds.
Enter the name edit mode.

3 Press the A.1A/5 button while pressing the SEL button.

continue to next page →

4 Press either the + or − button to select the name that you wish to erase.

5 Press the SEL button for more than two seconds.
Repeat step 4 and step 5 if necessary.

6 Press the LIST button for more than two seconds.
The unit returns to the normal radio/TV reception mode.

The alternative method to erase a name
You can erase a title by selecting eight "_"s (under-bar) as described in step 3 of "Storing the Station Name in the Memory of the Tuner" (page 11).

Other Functions

Adjusting the Sound Characteristics

1 Select the item you want to adjust by pressing the SEL button repeatedly.

VOL (volume) →BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 Adjust the selected item by pressing either the + or − button.

Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

Notes

- *When another digital pre-amplifier than XDP-U50D or a graphic equalizer is connected and the LINE-OUT/IN SELECT switch is set to ❷, "FAD" will not be displayed even with the SEL button pressed.*
- *When the optional XDP-U50D is connected, the fader settings can be set separately for the DSP on mode and DSP off mode.*
- *When you use a stereo graphic equalizer (not supplied), set the fader control to the center position and adjust the level with the equalizer.*

Muting the Sound Quickly

— Mute Function

Press the MUTE button. → The "MUTE" indication flashes.
The sound is muted at once. To restore the previous volume level, press again.

This function will be also canceled when:
— the + or OFF button is pressed.
— ejecting a cassette by pressing the ⏏ button during tape playback.

Changing the Illumination Color

Press the INTRO/1 button while pressing the SEL button.
You can choose the color between amber and green.

Storing the Sound Characteristics of each Source

— Source Tone Memory Function

Press the [4] button while pressing the [SEL] button. → "STM" will appear on the display.

This function memorizes the adjusted sound characteristics (the bass and treble) of each program source. With this function, you can listen to the same source always in the same sound characteristics even after changing the program source or tuning the unit off and on again.

To cancel the STM function, press these buttons again.

Note

When the optional XDP-U50D is connected, the STM function will not work.

Muting the Beep Tone

Press the [6] button while pressing the [SEL] button.

To obtain the beep tone again, press these buttons once more.

Enjoying Bass and Treble even at Low Volume

— Loudness Function

Press the [7] button while pressing the [SEL] button. → "LOUD" will appear on the display.

Bass and treble will be reinforced. To cancel, press these buttons again.

Note

When the optional XDP-U50D is connected, the loudness function will not work.

Changing the Line Output Level

(when the optional XDP-U50D and a graphic equalizer are connected)

Press the [8] button while pressing the [SEL] button.

To cancel the mode, press these buttons again.

DSP Function

With the optional XDP-U50D connected

If you connect the optional XDP-U50D, you can add some effects to the soundfield of the currently selected program source.

Overview of the Digital Signal Processor (DSP) Function

The DSP can digitalize and process the audio signal with high speed thus enabling you to adjust the acoustic characteristics of the source sound without losing the sound quality. With the DSP unit you can control the audio output and adjust the acoustic characteristics according to your preference.

Notes

- *When the optional XDP-U50D and a graphic equalizer are connected, the reproduced sound may become distorted if the audio output signal of the graphic equalizer is boosted too much. In this case, press* **preset number button 8** *while pressing the* **SEL button**. *This will reduce the volume, but the distorted sound can be suppressed. To cancel the mode, press these buttons once again. (In case the optional XDP-U50D is connected by the optical cable, the volume will not get reduced even if you press preset number button 8 and the SEL button.)*
- *To improve the efficiency of the listening position setting, the volume of the output sound from the rear speakers is lowered automatically.*
- *When the optional XDP-U50D is connected, the loudness function and STM function will not work.*

The DSP edit mode

The DSP function includes following select/adjust modes:

- Surround (SUR) menu select/effect level control mode (see page 24)
- Listening position (LP) adjust mode (see page 26)
- Subwoofer (SUB) cut-off frequency/volume control mode (see page 27)
- Bass (BAS) adjust mode (see page 27)
- Treble (TRE) adjust mode (see page 27)
- Fader (FAD) adjust mode (see page 28)

Display window	Selected mode	Adjustment of
SUR	Surround menu	Effect Level
LP1	Listening position	Left, right, front and rear listening position
SUB	Cut-off frequency	Subwoofer volume
BAS	Bass turn-over frequency	Bass volume
TRE	Treble turn-over frequency	Treble volume

In addition, there are also following DSP-related functions:

- DSP custom file function (see page 28)
- Last sound memory function (see page 29)

Selecting the Surround Mode

This unit features ten preset surround modes. You can select your desired surround mode to suit the source audio. These modes can simulate different soundfields so that you can enjoy the sensation of being close to the music source or being at a live concert etc.

Surround Menu

HALL	Concert hall
JAZZ	Jazz club
DISCO	Disco with thick walls
THEATER	Movie theater/cinema
PARK	Big open space
LIVE	Live concert
OPERA	Opera house
CHURCH	Church/chapel with a lot of reverberation
STADIUM	Open-air concert in a stadium
CELLAR	Cellar with a lot of reverberation
DEFEAT	Normal mode without any DSP effects*

** The surround mode will be canceled. However, other preset levels of the DSP function menu can be adjusted.*

1 Select a program source (tape, radio, CD or MD) by pressing the TAPE, TUNER or MD/CD button.

2 Press the DSP button for more than one second. → "DSP" appears on the display.
Enter the surround menu select mode.

3 Press either the + or − button to select the desired surround menu.

+ HALL → JAZZ → DISCO → ..... → DEFEAT → HALL

− CELLAR → STADIUM → CHURCH → ..... → DEFEAT → CELLAR

Note

If the "DEFEAT" mode is selected, the sound will be restored to the original state without any effects. (The "DSP" indication will disappear.)

4 Press the DSP button for more than one second.
You can continue to listen with the selected surround menu.

To cancel, press the DSP button momentarily. → "DSP" disappears from the display.

Adjusting the Effect Level

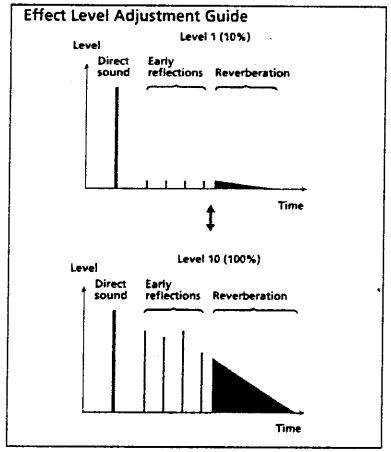
Balance and level of the reflections and of the reverberation of the selected surround mode can be adjusted.

1 Select the surround mode by performing steps 1 to 3 noted above.

2 Press the SEL button momentarily.
Enter the effect level adjust mode.

3 Press either the + or − button to select the desired level.

You can adjust from 0 to 10. The higher the percentage, the more resembles the sound a live performance.



4 Ⓐ To continue to adjust the effect level of another surround menu,
press the SEL button momentarily.

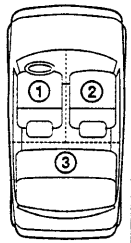
Ⓑ To cancel the effect level adjust mode,
press the DSP button for mode than one second.

To stop the setting procedure,
Press the DSP button for more than one second.

To change the effect level to the original (factory-set) setting,
Press the SEL button for more than two seconds.

Selecting the Listening Position

The time it takes for the sound from the speakers to the listener can be selected. Even in an imperfect listening environment, such as inside a car, it is possible to simulate a natural soundfield so that a listener can feel as if he is in the center of the soundfield wherever he sits in the car.

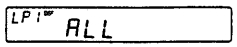


Display window	Center of soundfield
LP1 ALL	Normal setting (① + ② + ③)
LP2 FRONT	Front part (① + ②)
LP3 FRONT R	Right front (②)
LP4 FRONT L	Left front (①)
LP5 REAR	Rear part (③)

1 Select a program source (tape, radio, CD or MD) by pressing the TAPE, TUNER or MD/CD button.

2 Press the DSP button for more than one second. → "DSP" appears on the display.

3 Press the DSP button momentarily several times until you get the "LP1" indication.
Enter the listening position adjust mode.



4 Press either the + or − button to select the desired level.

By pressing either the + or − button repeatedly, the listening position indication in the display window will change as follows:

+ ALL (LP1) → FRONT (LP2) → ..... → REAR (LP5) → ALL (LP1)

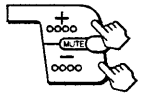
− ALL (LP1) → REAR (LP5) → ..... → FRONT (LP2) → ALL (LP1)

5 To cancel the listening position adjust mode,
press the DSP button for more than one second.

Setting the listening position more specifically

1 After selecting the listening position by performing steps 1 to 3, press the SEL button.
Enter the left/right balance adjust mode.

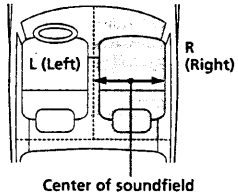
2 Press either the + or − button to set the center of the soundfield.



Center moves toward R (right).

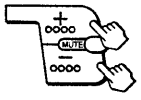
Center moves toward L (left).

For example, adjustment of the left/right balance of "LP3"



3 Press the SEL button.
Enter the front/rear balance adjust mode.

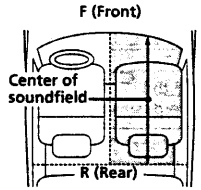
4 Press either the + or − button to set the center of the soundfield.



Center moves toward R (rear).

Center moves toward F (front).

For example, adjustment of the front/rear balance of "LP3"

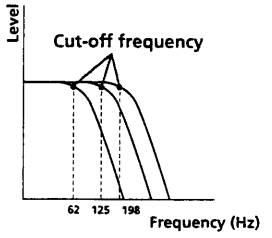


5 Ⓐ To continue to adjust another the listening position,
press the SEL button momentarily.

Ⓑ To cancel the balance adjust mode,
press the DSP button for more than one second.

Adjusting the Cut-off Frequency and Volume of the Subwoofer(s)

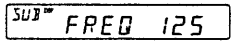
To match the characteristics of the connected subwoofer(s), you can cut the unwanted high and middle frequency audio signal entering the subwoofer(s). The frequency at which the audio signal is cut off is called the cut-off frequency. By setting the cut-off frequency, the subwoofer(s) will output only low frequency signals so that a clearer sound image can be created.



1 Select a program source (tape, radio, CD or MD) by pressing the TAPE, TUNER or MD/CD button.

2 Press the DSP button for more than one second. → "DSP" appears on the display.

3 Press the DSP button momentarily several times until you get the "SUB" indication.
Enter the cut-off frequency adjust mode.



4 Press either the + or − button to select the desired cut-off frequency.

By pressing either the + or − button repeatedly, the listening position indication in the display window will change as follows:

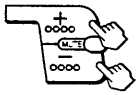
+: 62 Hz → 78 Hz → 99 Hz → 125 Hz* → 157 Hz → 198 Hz

−: 198 Hz → 157 Hz → 125 Hz* → 99 Hz → 78 Hz → 62 Hz

* Factory-set frequency

5 Press the SEL button momentarily.
Enter the volume control mode.

6 Press either the + or − button to adjust the volume.



Subwoofer volume increases.

Subwoofer volume decreases.

Note
At the lowest volume setting the subwoofer sound will be completely cut out (submute).

7 Ⓐ To continue to select another the cut-off frequency,
press the SEL button momentarily.

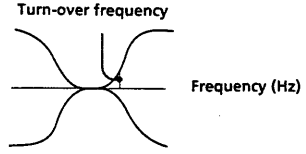
Ⓑ To cancel the cut-off frequency adjust mode,
press the DSP button for more than one second.

Stopping the setting procedure
Press the DSP button for more than one second.

Changing the cut-off frequency to the original (factory-set) setting
Press the SEL button for more than two seconds.

Adjusting the Bass and Treble

When the bass or treble frequency is changed, the original frequency is called the turn-over frequency. By selecting the bass or treble turn-over frequencies, you can control the volume thus matching the acoustic characteristics inside your car.



1 Select a program source (tape, radio, CD or MD) by pressing the TAPE, TUNER or MD/CD button.

2 Press the DSP button for more than one second. → "DSP" appears on the display.

continue to next page →

3 Press the DSP button momentarily several times to get the "BAS" or "TRE" indication.
Enter the bass or treble adjust mode.

Bass adjust mode

Treble adjust mode

4 Press either the + or − button to select the turn-over frequency.

By pressing either the + or − button repeatedly, the turn-over frequencies in the bass adjust mode will change as follows:

+: 198 Hz → 250 Hz → 314 Hz* → 396 Hz

−: 396 Hz → 314 Hz* → 250 Hz → 198 Hz

* Factory-set frequency

By pressing either the + or − button repeatedly, the turn-over frequencies in the treble adjust mode will change as follows:

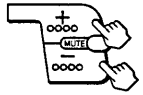
+: 2.0 kHz → 3.1 kHz* → 4.0 kHz → 5.0 kHz

−: 5.0 kHz → 4.0 kHz → 3.1 kHz* → 2.0 kHz

* Factory-set frequency

5 Press the SEL button momentarily.
Enter the volume control mode.

6 Press either the + or − button to adjust the volume.



Bass or treble volume is boosted.

Bass or treble volume is cut.

7 Ⓐ To continue to select another the turn-over frequency,
press the SEL button momentarily.

Ⓑ To cancel the bass or treble adjust mode,
press the DSP button for more than one second.

To stop the setting procedure
Press the DSP button for more than one second.

To change the bass or treble to the original (factory-set) setting
Press the SEL button for more than two seconds.

Fader (FAD) Adjustment

The fader can be adjusted separately for the DSP on mode and DSP off mode. Normally, with the DSP mode on, the volume of the output sound from the rear speakers is lowered automatically to improve the efficiency of the listening position setting. If you want to raise the rear speaker volume, adjust the fader.

For this operation, refer to page 12.

DSP Custom File Function

(With Optional CD changer(s) connected)

Registering Surround Modes onto Discs

Once you have registered the desired surround modes onto the discs, you can enjoy the same surround modes every time you play these discs. (With one CD changer, you can register surround modes onto a maximum of 110 discs. See page 21 for more details.)

Note
Before registering the DSP custom file, make sure that you have titled the discs (page 21).

1 Play the disc whose surround mode you wish to register.

2 Press the LIST button for more than two seconds.
Enter the name edit mode.

Note
If the disc has no title, "_ _ _ _ _ _" will appear in the display window. Refer to "Putting Your Personalized Titles onto the CDs" on page 21.

3 Press the LIST button momentarily twice.
Enter the DSP file registering mode.

4 Press either the + or − button to select the surround menu.

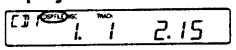
+: HALL → JAZZ → DISCO → ..... → DEFEAT → HALL

−: CELLAR → STADIUM → CHURCH → ..... → DEFEAT → CELLAR

5 Press the [LIST] button for more than two seconds.
Enter the normal CD playback mode.

Playing in the DSP Custom File Mode

Press the [DSP] button while pressing the [SEL] button during CD playback. → "DSP" and "FILE" appears on the display.



To cancel, press these buttons again.

Notes

- *When you press the DSP button during CD playback in the DSP custom file mode, the surround mode will be canceled. However, if you change the disc, the new disc will be played in the surround mode registered in the DSP custom file.*
- *If no surround mode is registered on a disc, the "DSP" indication will not appear.*

Changing the registered surround mode

Play the disc whose surround mode you wish to change, and repeat from step 2 on page 28 to step 5.

Erasing the registered surround mode

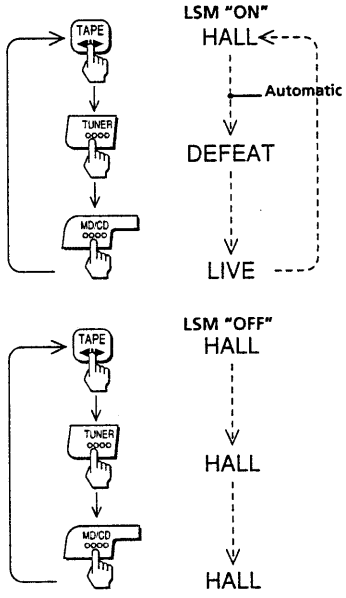
Select the DEFEAT mode in step 4 on page 28.

Listening to each Program Source in its Registered Surround Mode

— LSM (Last Sound Memory) Function

This function memorizes the last-selected surround mode of each program source. With this function, you can listen to the same source always in the same surround mode even after changing the program source or turning the unit off and on again.

For example, if you listen in following order to a MD in the "HALL" mode, to the radio in the "DEFEAT" mode, to a CD in the "LIVE" mode and change then to MD playback, the surround mode will automatically change to "HALL". If you change then to radio, the surround mode will change to "DEFEAT".

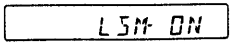


Note

Even with the LSM function off, it is possible to change the surround mode manually.

Playback with the LSM Function

Press the [10] button while pressing the [SEL] button. → "LSM" appears on the display.



To cancel, press these buttons again.

Note

When you play a CD in the DSP custom file mode, the various surround modes registered on the discs will change automatically even when the LSM function is on.

Error displays (with the optional CD/MD changer(s) connected)

The following indications will flash for about five seconds and an alarm sound will be heard.

Display	Cause	Solution
NO MAG	The disc magazine is not inserted in the CD/MD changer.	Insert the disc magazine with discs into the CD/MD changer.
NO DISC	No disc is inserted in the disc magazine.	Take out the magazine and insert the discs.
ERROR	The disc is dirty.	Clean the disc*.
	The disc is inserted upside down.	Insert the disc correctly.
RESET	The CD/MD changer cannot be operated because of some problem.	Press the reset button of the unit.
NO READY	The lid of the MD changer is open or MDs are not inserted properly.	Close the lid or inserted the MDs properly.
BLANK	No tracks have been recorded on the MD.	Play a MD with recorded tracks on it.
HI TEMP	The ambient temperature is more than 50°C.	Wait until the temperature goes down below 50°C.

** In case of a MD, insert another MD.*

If the above-mentioned solutions do not help to improve the situation, consult your nearest Sony dealer.

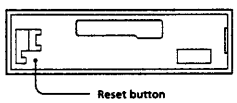
Connection

Caution

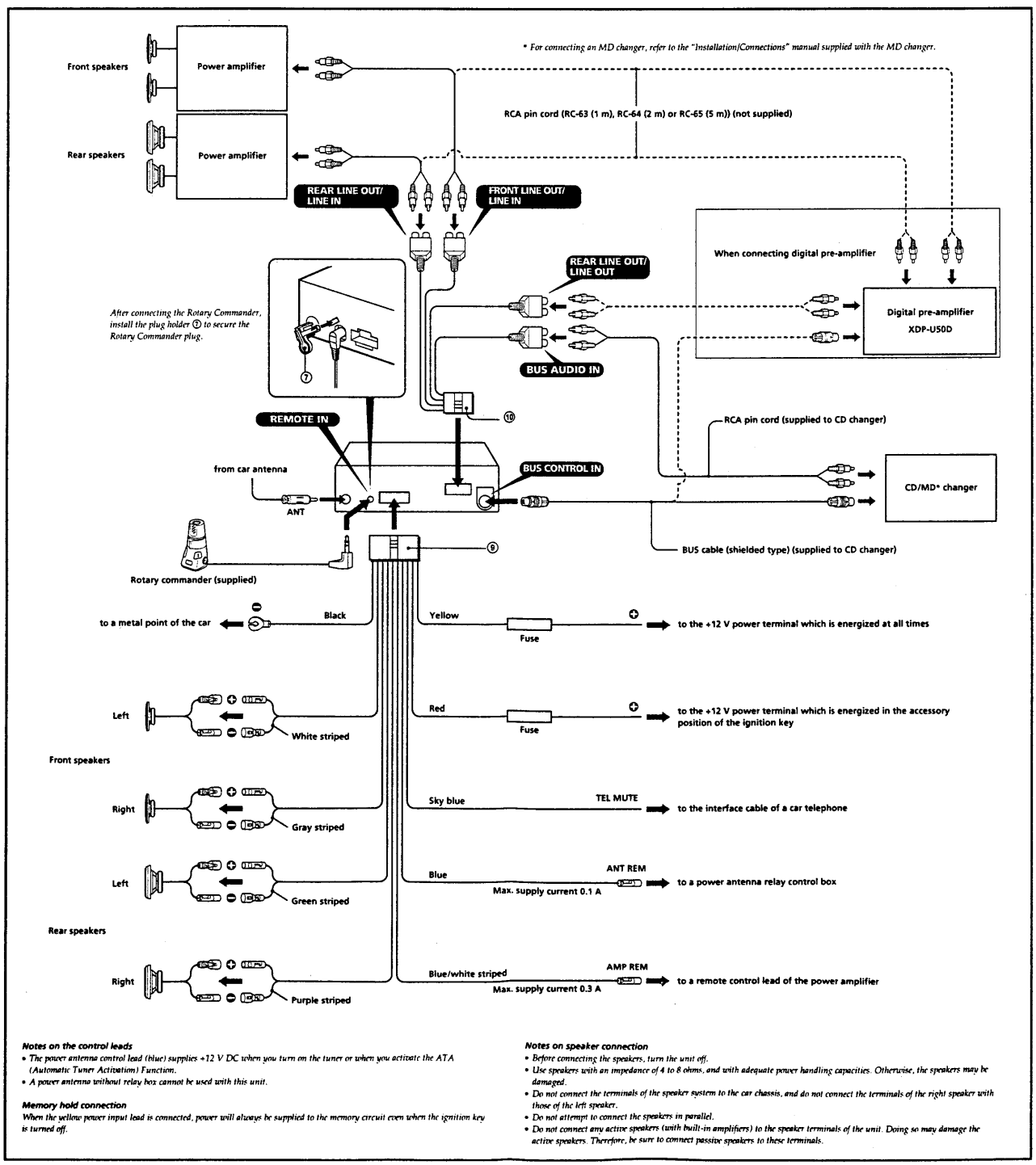
- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**

Reset Button

When the installation and connections are over, be sure to press the reset button with a ball-point pen etc. The reset button is located on the left of the connector on the unit side when the front panel is detached.



Connection Example


* For connecting an MD changer, refer to the "Installation/Connections" manual supplied with the MD changer.
Front speakers
Power amplifier
Rear speakers
Power amplifier
RCA pin cord (RC-63 (1 m), RC-64 (2 m) or RC-65 (5 m)) (not supplied)
REAR LINE OUT/ LINE IN
FRONT LINE OUT/ LINE IN
When connecting digital pre-amplifier
REAR LINE OUT/ LINE OUT
Digital pre-amplifier XDP-U50D
BUS AUDIO IN
After connecting the Rotary Commander, install the plug holder ⑦ to secure the Rotary Commander plug.
⑦
⑩
REMOTE IN
RCA pin cord (supplied to CD changer)
from car antenna
ANT
BUS CONTROL IN
CD/MD* changer
⑨
BUS cable (shielded type) (supplied to CD changer)
Rotary commander (supplied)
to a metal point of the car
Black
Yellow
Fuse
to the +12 V power terminal which is energized at all times
Left
White striped
Red
Fuse
to the +12 V power terminal which is energized in the accessory position of the ignition key
Front speakers
Right
Gray striped
Sky blue
TEL MUTE
to the interface cable of a car telephone
Left
Green striped
Blue
ANT REM
Max. supply current 0.1 A
to a power antenna relay control box
Rear speakers
Right
Purple striped
Blue/white striped
AMP REM
Max. supply current 0.3 A
to a remote control lead of the power amplifier

Notes on the control leads

- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation) Function.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection

- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

If Your Car has No Accessory Position on the Ignition Key Switch

— POWER SELECT Switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear if **your car has no accessory position on the ignition key switch.** To avoid this battery wear, **set the POWER SELECT switch located on the bottom of the unit to the ❶ position, then press the reset button.** The illumination is reset to stay off while the unit is not being played.

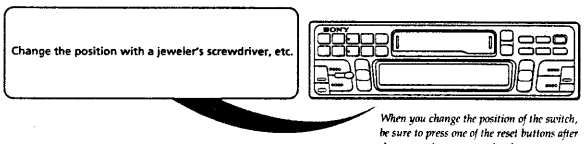
Note

The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the ❶ position.

When a digital pre-amplifier etc. is connected

— LINE-OUT/IN SELECT Switch

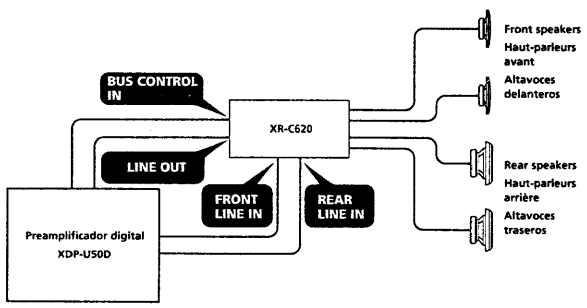
Set the LINE-OUT/IN SELECT switch, which is on the underside of the unit, to position ❷, so that the LINE-OUT/IN terminal will function as LINE-IN terminal.
With the switch in position ①, the terminal will work as LINE-OUT terminal.



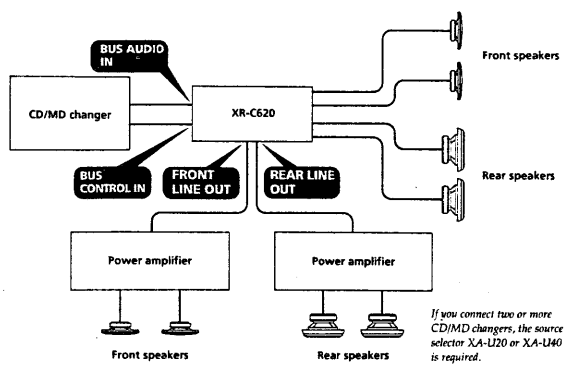
When you change the position of the switch, be sure to press one of the reset buttons after the connections are completed.

Connection Diagram

Example 1 Set the LINE-OUT/IN SELECT switch to position ❷.

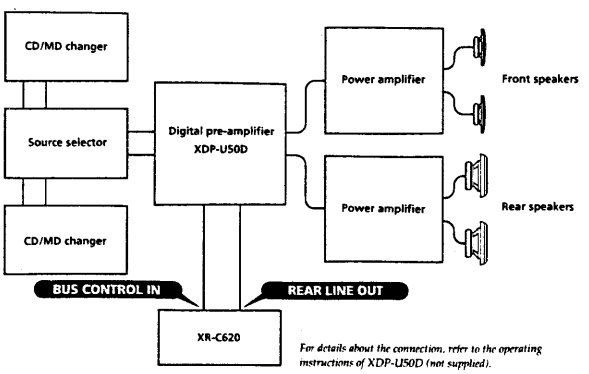


Example 2 Set the LINE-OUT/IN SELECT switch to position ①.



If you connect two or more CD/MD changers, the source selector XA-U20 or XA-U40 is required.

Example 3 Set the LINE-OUT/IN SELECT switch to position ①.

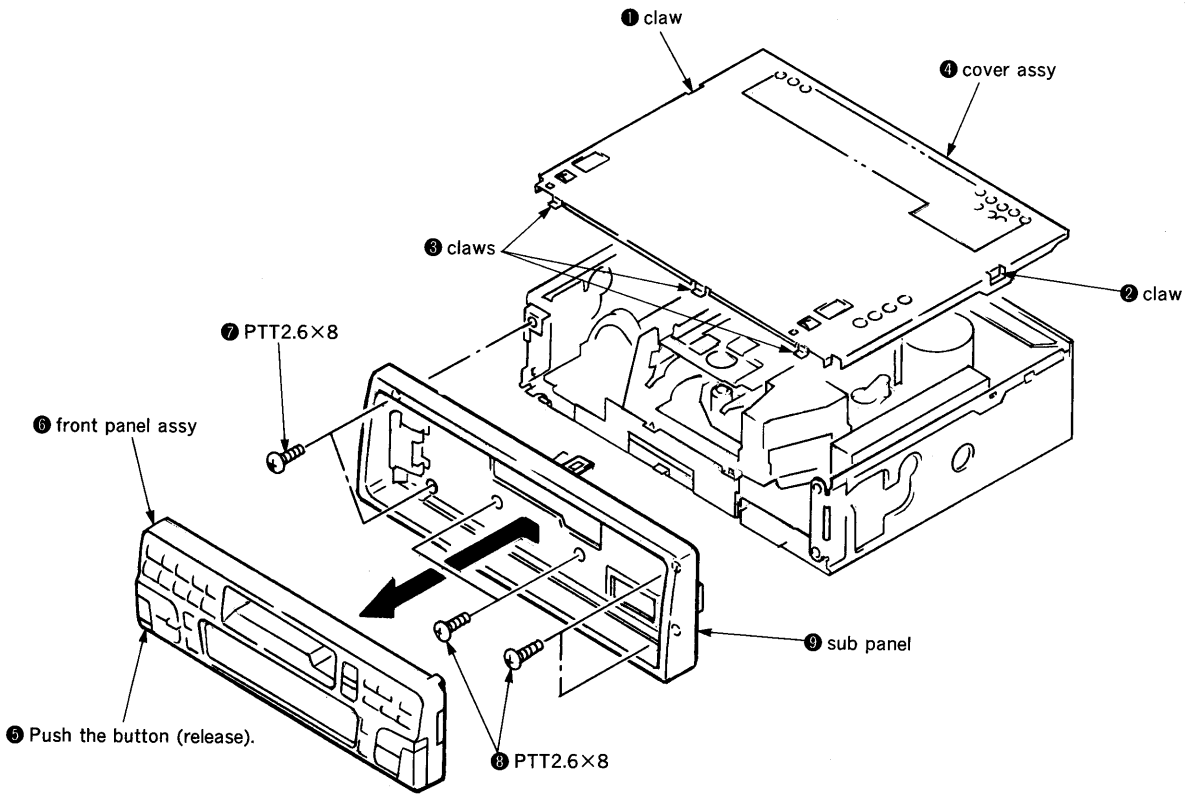


For details about the connection, refer to the operating instructions of XDP-U50D (not supplied).

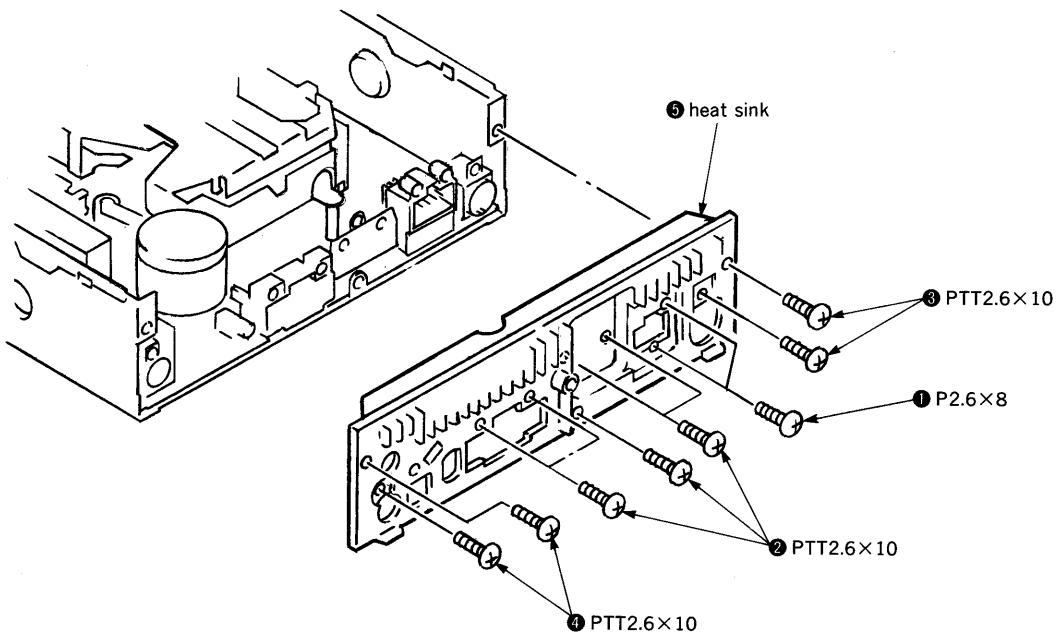
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

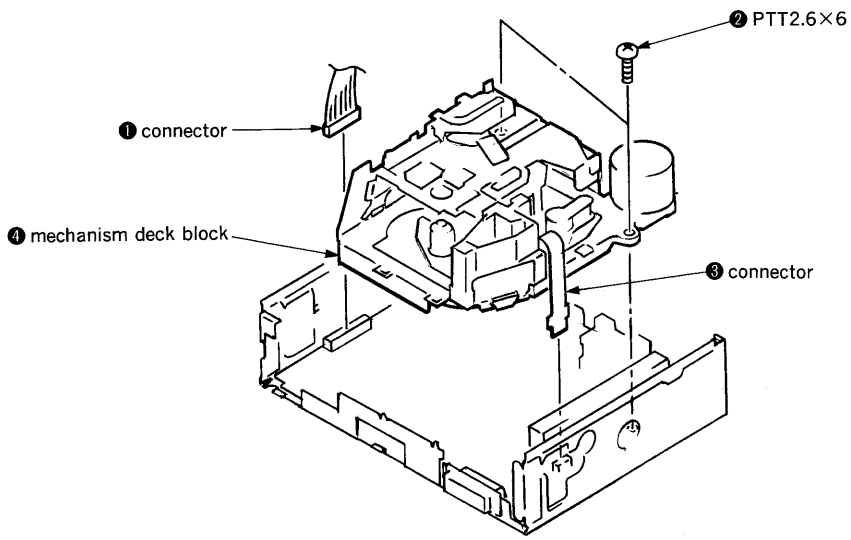
2-1. SUB PANEL



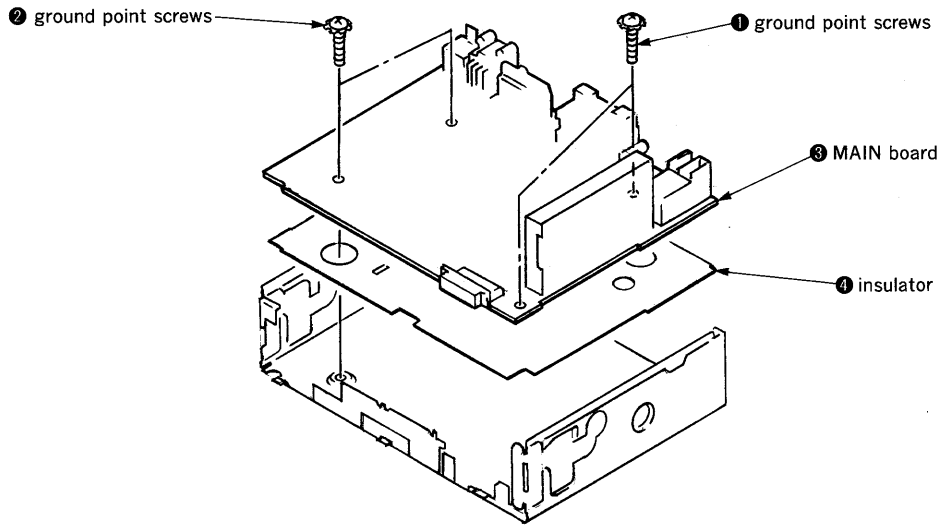
2-2. HEAT SINK



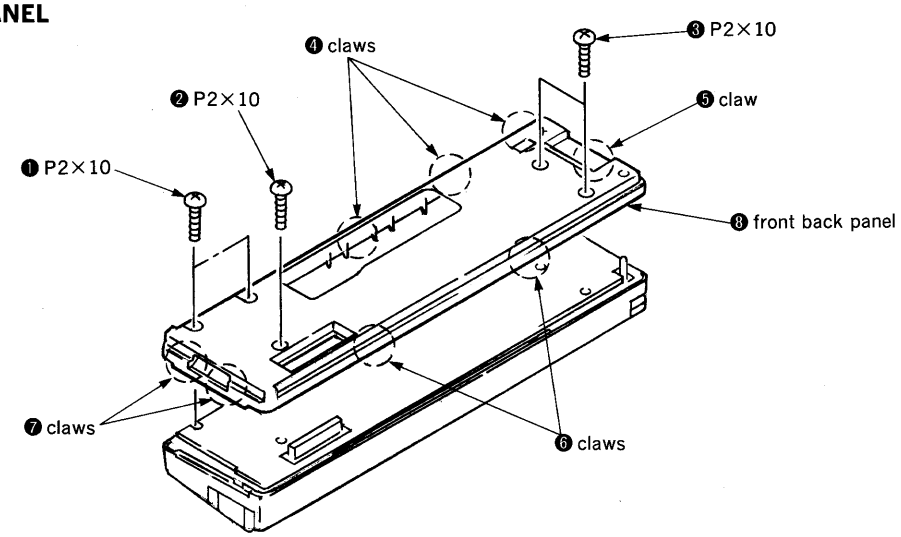
2-3. MECHANISM DECK BLOCK



2-4. MAIN BOARD



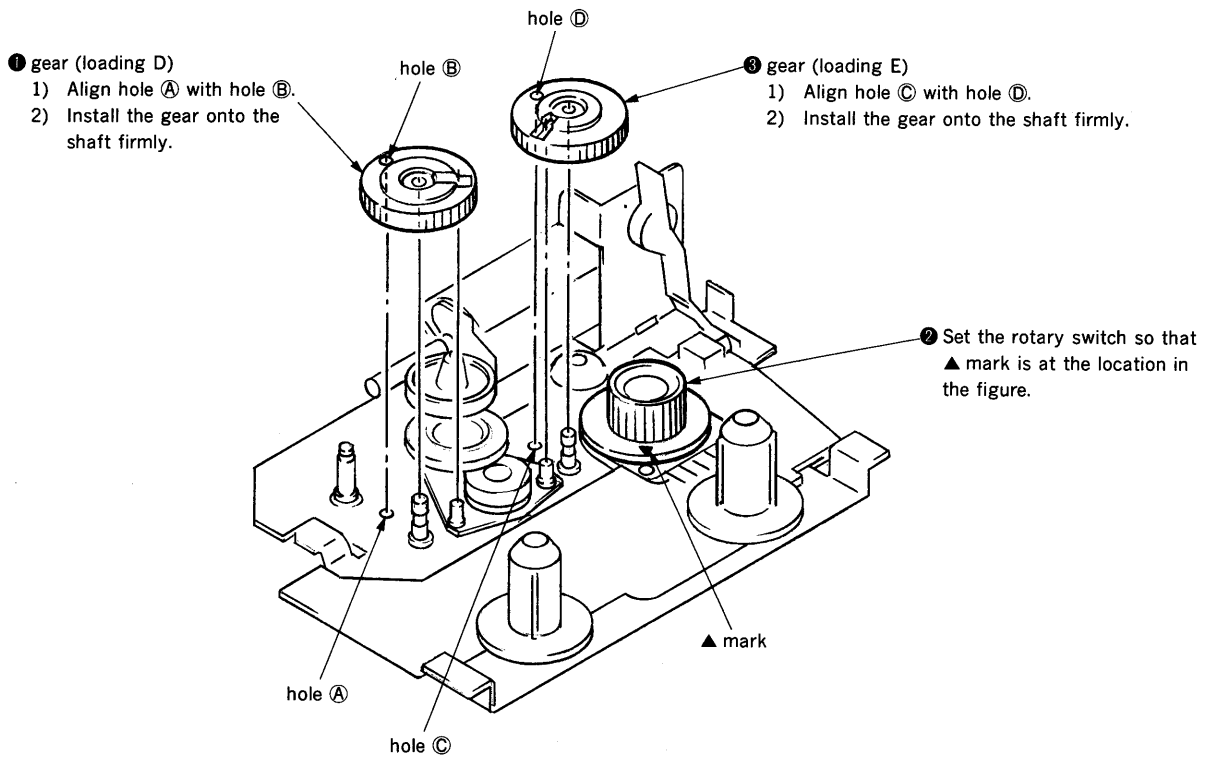
2-5. FRONT BACK PANEL



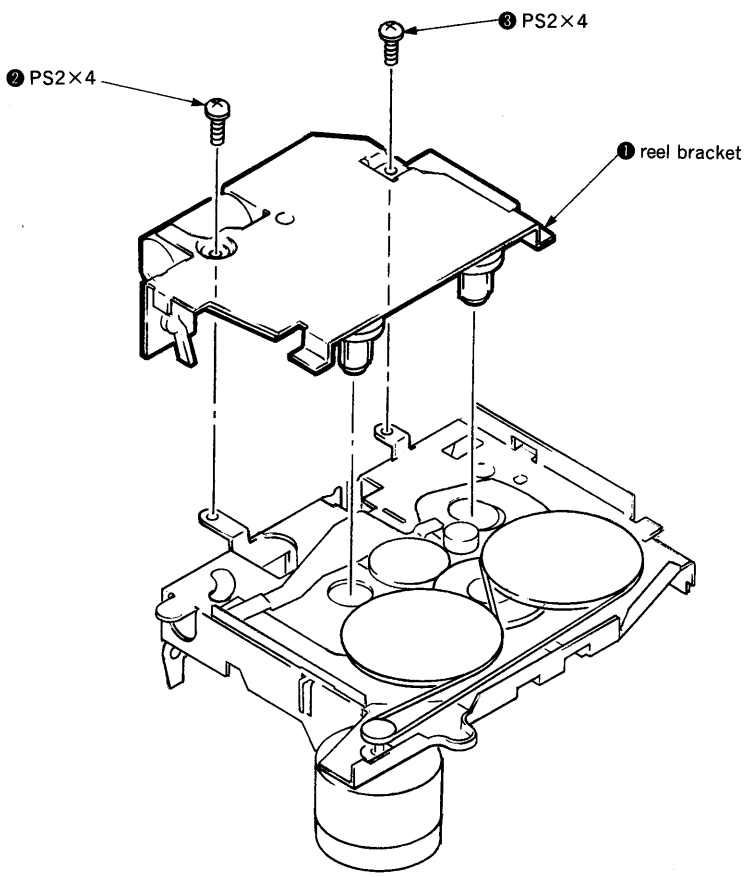
SECTION 3
ASSEMBLY OF MECHANISM DECK

Note : Follow the assembly procedure in the numerical order given.

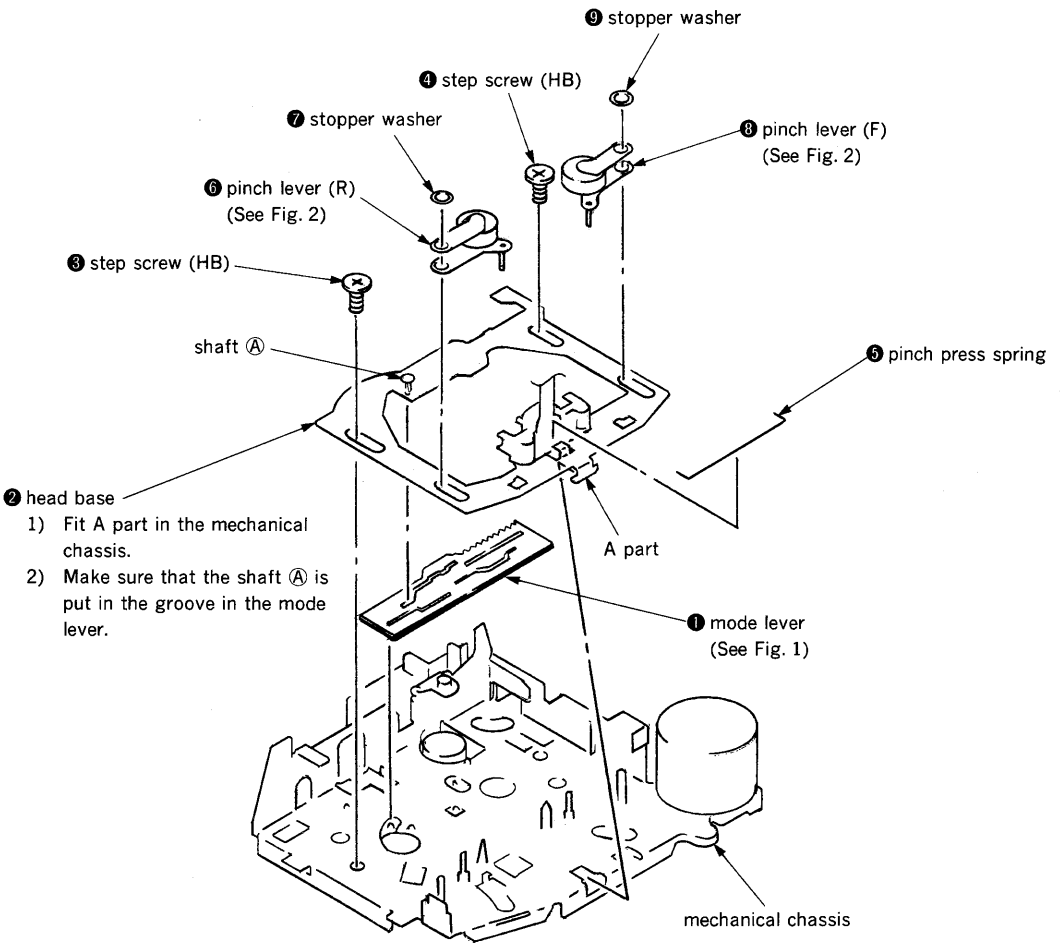
3-1. INSTALLING THE LOADING GEARS


❶ gear (loading D)
1) Align hole Ⓐ with hole Ⓑ.
2) Install the gear onto the shaft firmly.
hole Ⓑ
hole Ⓓ
❸ gear (loading E)
1) Align hole Ⓒ with hole Ⓓ.
2) Install the gear onto the shaft firmly.
❷ Set the rotary switch so that ▲ mark is at the location in the figure.
▲ mark
hole Ⓐ
hole Ⓒ

3-2. INSTALLING THE REEL BRACKET



3-3. INSTALLING THE MODE LEVER AND PINCH LEVERS


❾ stopper washer
❹ step screw (HB)
❼ stopper washer
❽ pinch lever (F)
(See Fig. 2)
❻ pinch lever (R)
(See Fig. 2)
❸ step screw (HB)
shaft Ⓐ
❺ pinch press spring
❷ head base
1) Fit A part in the mechanical chassis.
2) Make sure that the shaft Ⓐ is put in the groove in the mode lever.
A part
❶ mode lever
(See Fig. 1)
mechanical chassis

1) Align • mark on the rotary switch with hole on the mode lever.
2) Make sure that the two shafts and three projections are located as shown below.

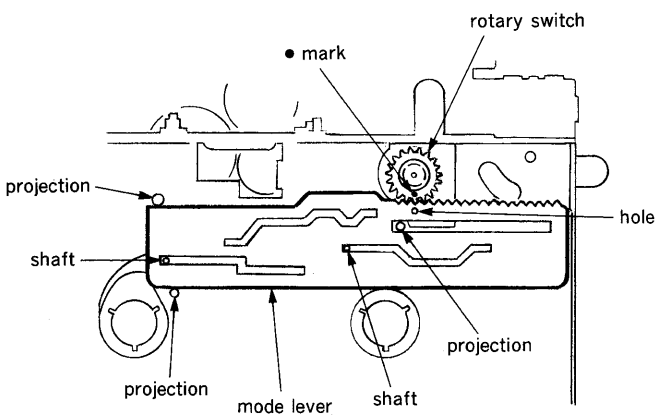


Fig. 1

1) Put the shafts of the pinch levers in the pinch press spring on its head side.

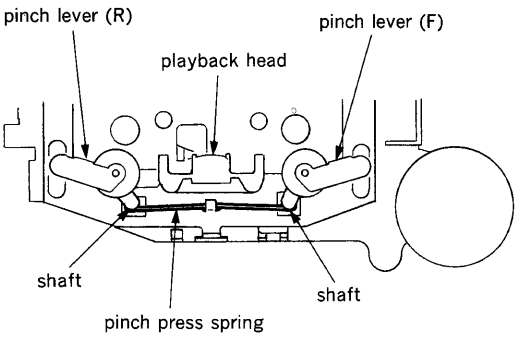


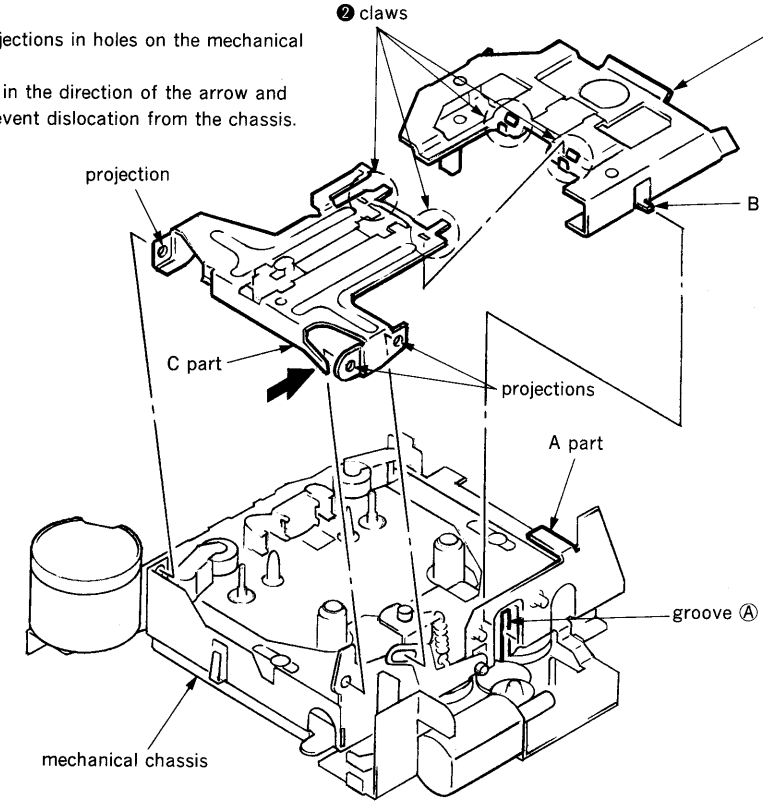
Fig. 2

3-4. INSTALLING THE CASSETTE HOUSING

❸ housing hanger
1) Fit three projections in holes on the mechanical chassis.
2) Bend C part in the direction of the arrow and fasten to prevent dislocation from the chassis.

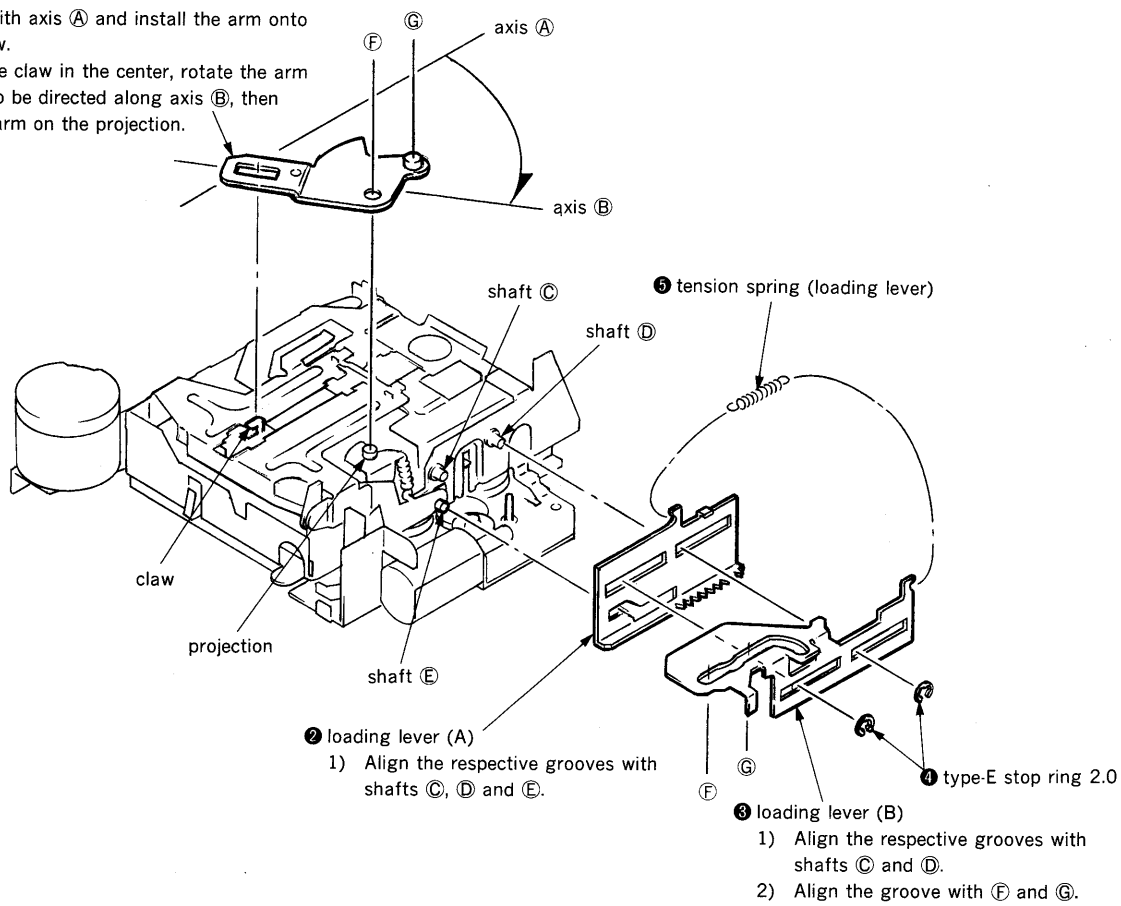
❷ claws

❶ cassette housing
1) Put the cassette housing under A part.
2) Fit B part in groove Ⓐ.

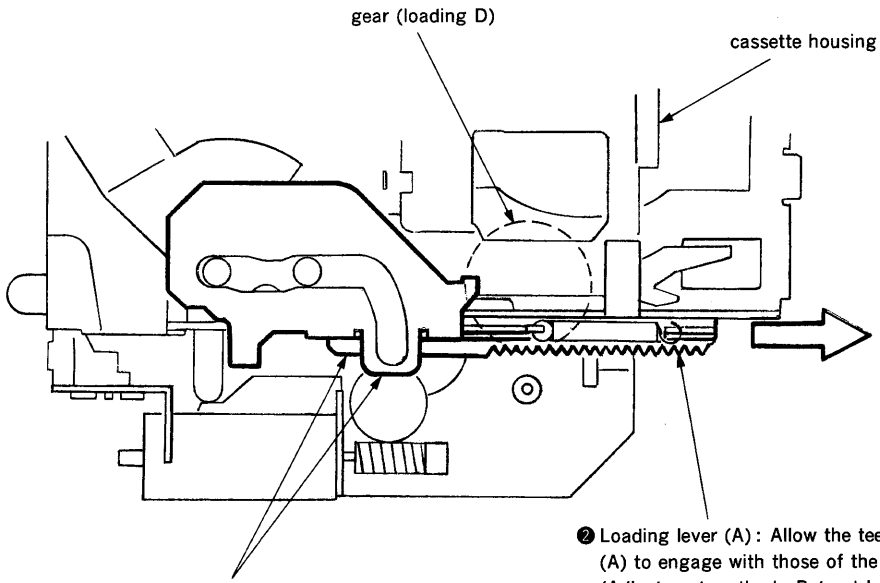


3-5. INSTALLING THE LOADING LEVER

❶ suction arm
1) Align with axis Ⓐ and install the arm onto the claw.
2) With the claw in the center, rotate the arm so as to be directed along axis Ⓑ, then fit the arm on the projection.



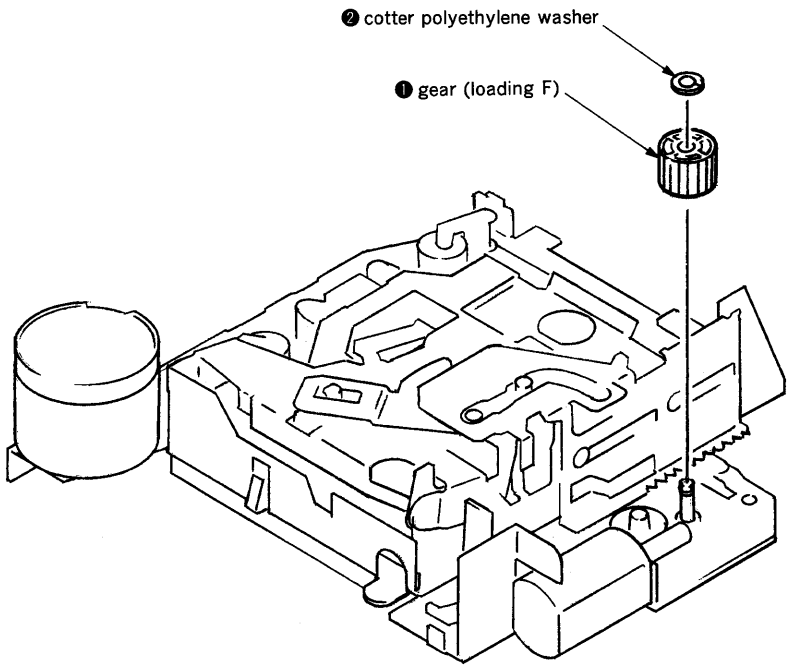
3-6. POSITIONING THE LOADING LEVERS



❶ Loading levers (A) and (B): Move loading levers (A) and (B) in the direction of the arrow.
(The cassette housing is put down fully at this time.)

❷ Loading lever (A): Allow the teeth of loading lever (A) to engage with those of the gear (loading D).
(Adjustment method: Retract loading lever (A) by 0.2 to 0.5mm in the opposite direction of the arrow.)

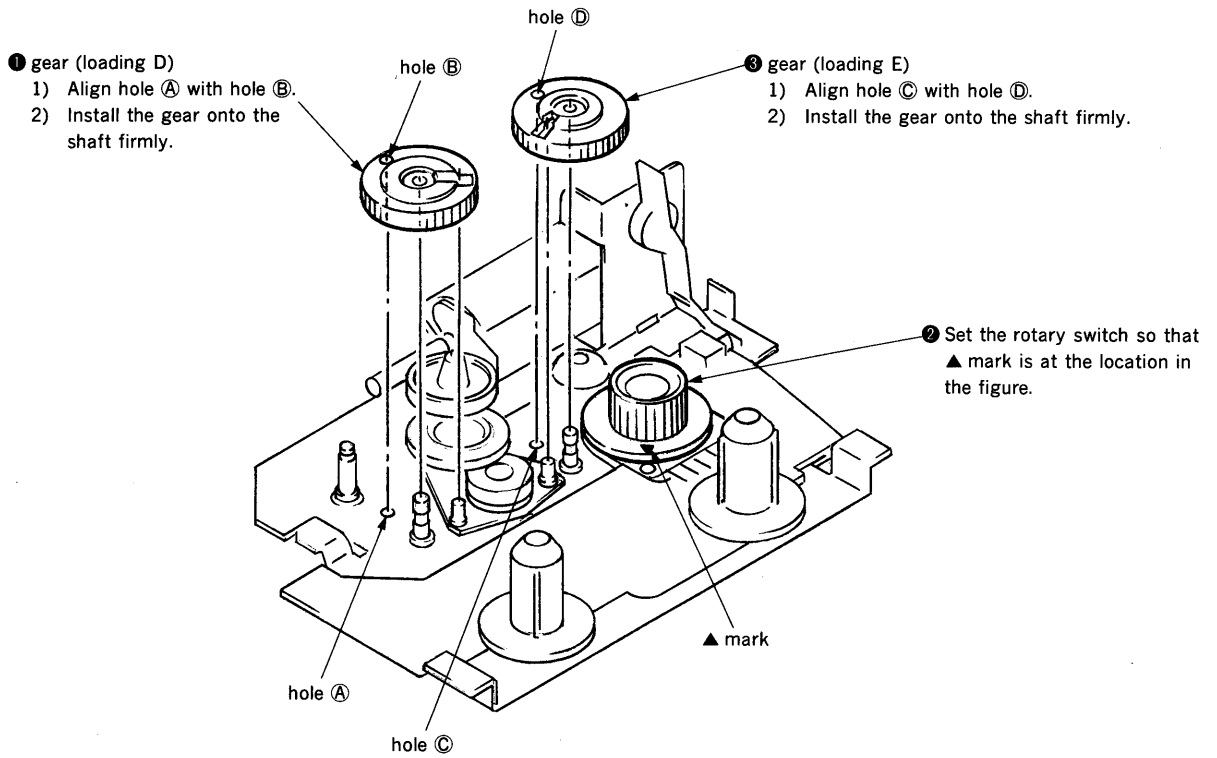
3-7. INSTALLING THE GEAR (LOADING F)



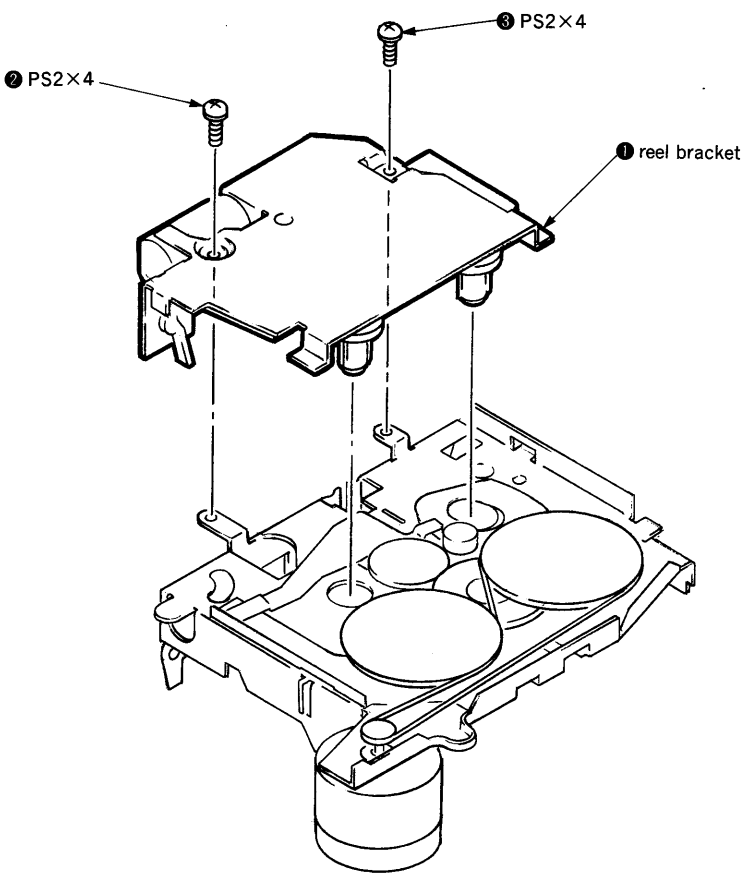
SECTION 3
ASSEMBLY OF MECHANISM DECK

Note : Follow the assembly procedure in the numerical order given.

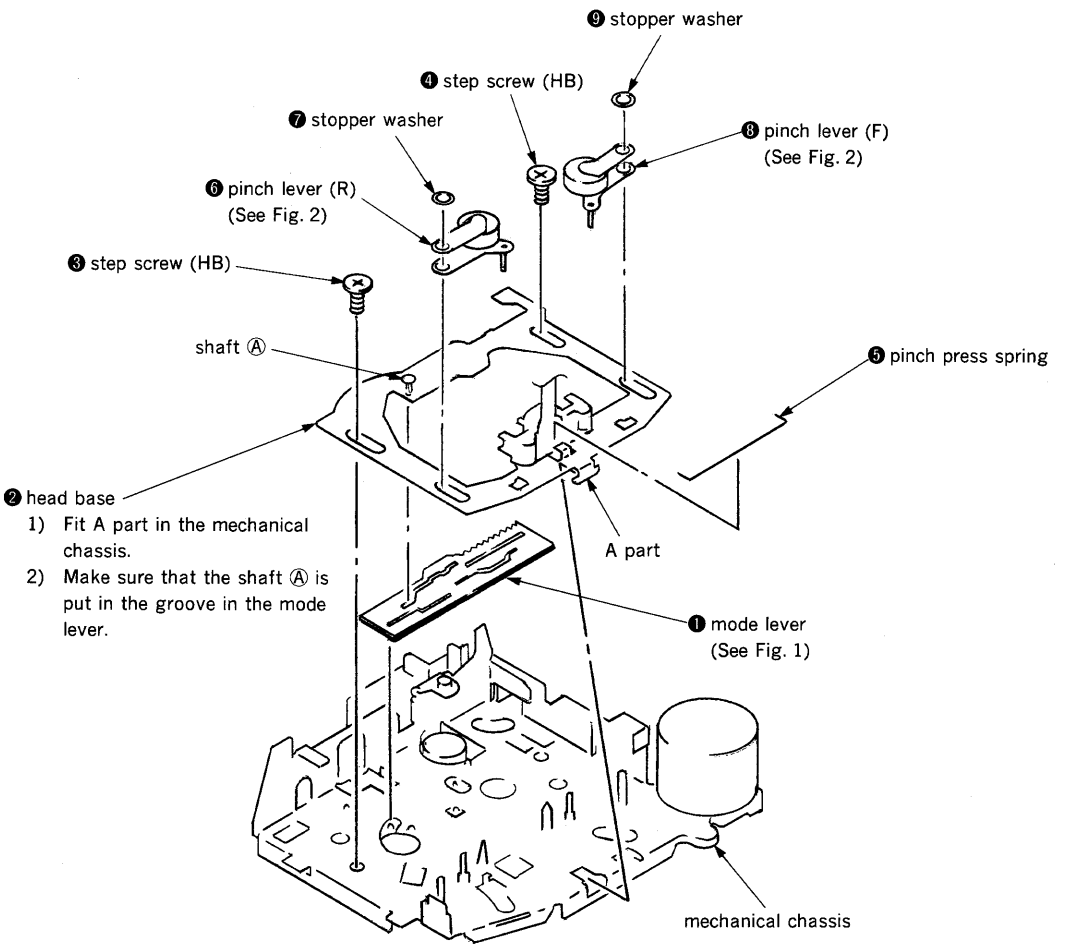
3-1. INSTALLING THE LOADING GEARS


❶ gear (loading D)
1) Align hole Ⓐ with hole Ⓑ.
2) Install the gear onto the shaft firmly.
hole Ⓑ
hole Ⓓ
❸ gear (loading E)
1) Align hole Ⓒ with hole Ⓓ.
2) Install the gear onto the shaft firmly.
❷ Set the rotary switch so that ▲ mark is at the location in the figure.
▲ mark
hole Ⓐ
hole Ⓒ

3-2. INSTALLING THE REEL BRACKET



3-3. INSTALLING THE MODE LEVER AND PINCH LEVERS


❾ stopper washer
❹ step screw (HB)
❼ stopper washer
❽ pinch lever (F)
(See Fig. 2)
❻ pinch lever (R)
(See Fig. 2)
❸ step screw (HB)
shaft Ⓐ
❺ pinch press spring
❷ head base
1) Fit A part in the mechanical chassis.
2) Make sure that the shaft Ⓐ is put in the groove in the mode lever.
A part
❶ mode lever
(See Fig. 1)
mechanical chassis

1) Align • mark on the rotary switch with hole on the mode lever.
2) Make sure that the two shafts and three projections are located as shown below.

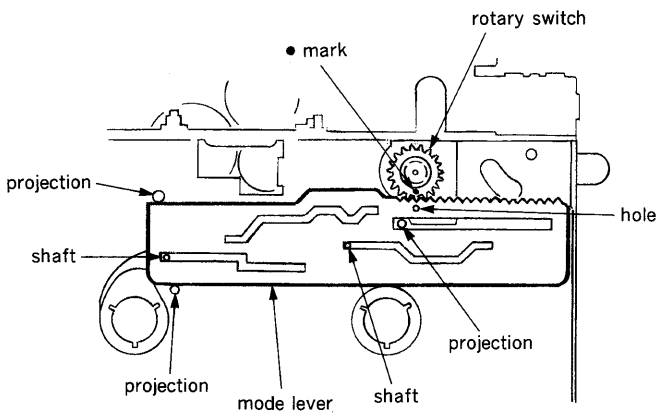


Fig. 1

1) Put the shafts of the pinch levers in the pinch press spring on its head side.

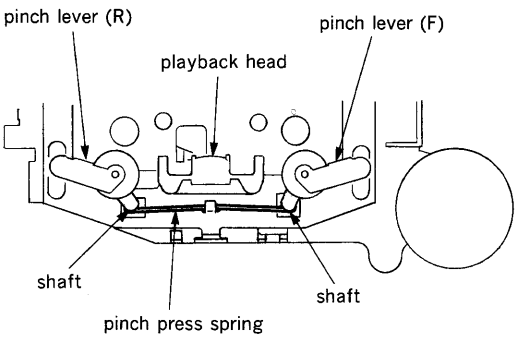
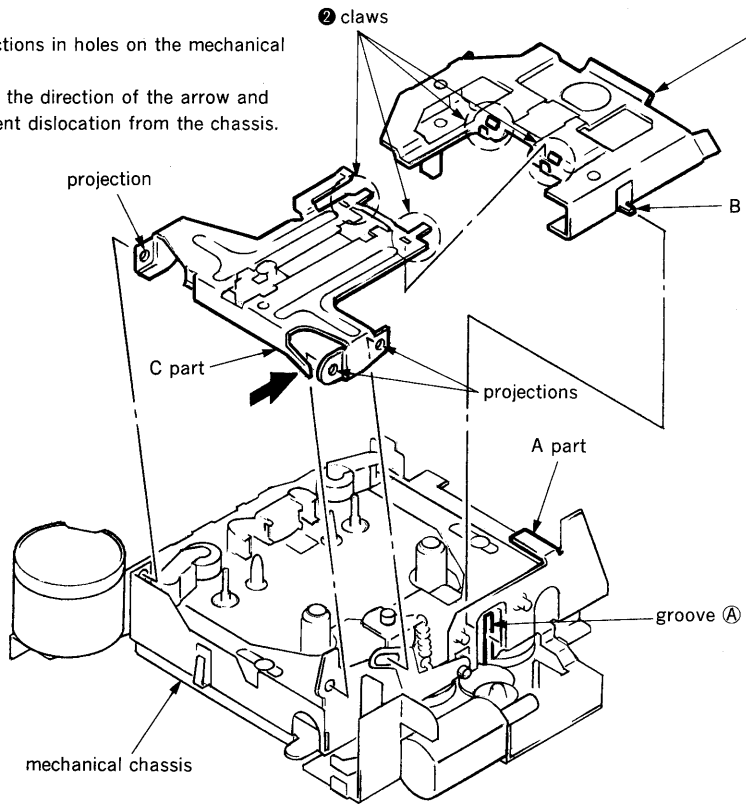


Fig. 2

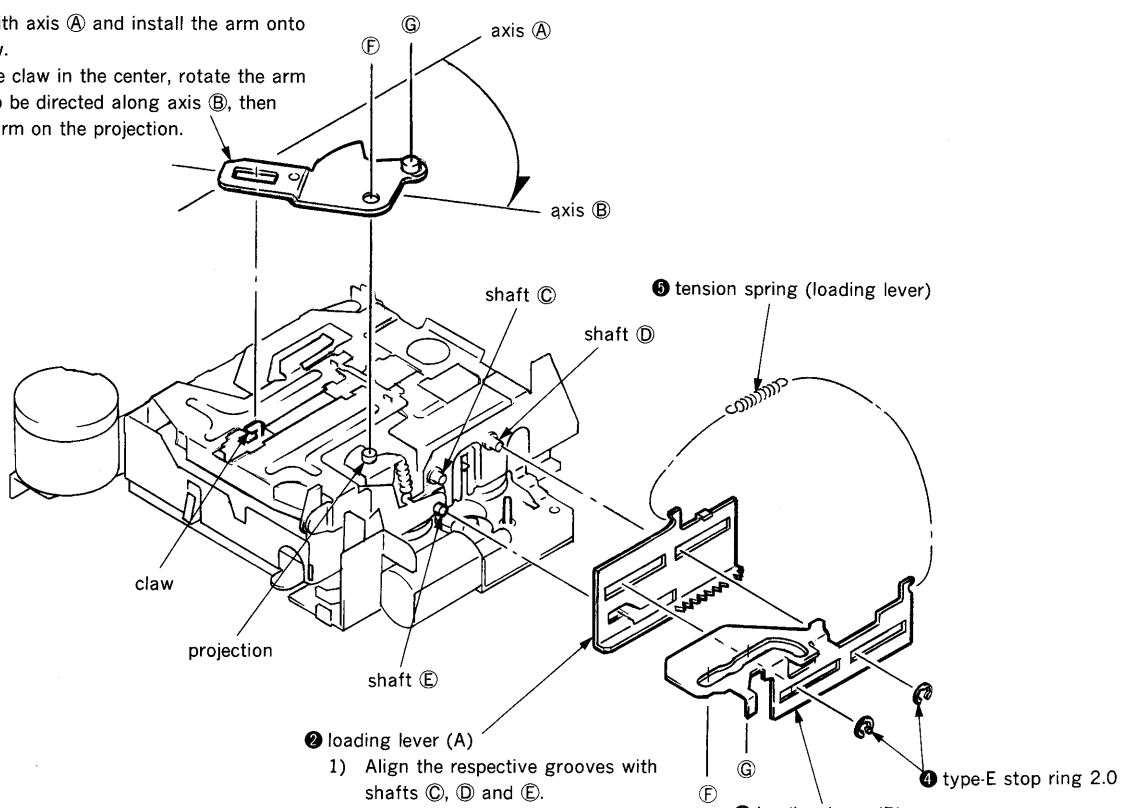
3-4. INSTALLING THE CASSETTE HOUSING

❸ housing hanger
1) Fit three projections in holes on the mechanical chassis.
2) Bend C part in the direction of the arrow and fasten to prevent dislocation from the chassis.

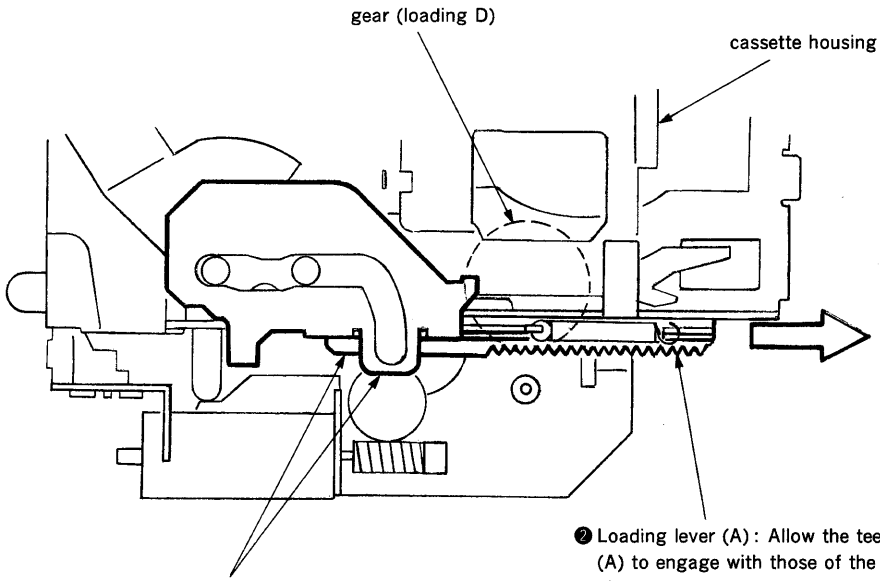


3-5. INSTALLING THE LOADING LEVER

❶ suction arm
1) Align with axis Ⓐ and install the arm onto the claw.
2) With the claw in the center, rotate the arm so as to be directed along axis Ⓑ, then fit the arm on the projection.



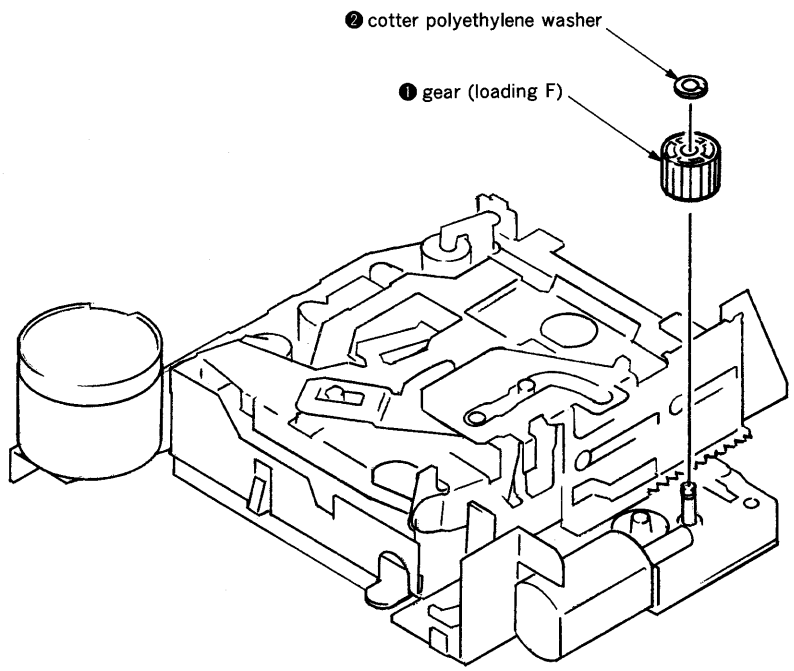
3-6. POSITIONING THE LOADING LEVERS



❶ Loading levers (A) and (B) : Move loading levers (A) and (B) in the direction of the arrow.
(The cassette housing is put down fully at this time.)

❷ Loading lever (A) : Allow the teeth of loading lever (A) to engage with those of the gear (loading D).
(Adjustment method : Retract loading lever (A) by 0.2 to 0.5mm in the opposite direction of the arrow.)

3-7. INSTALLING THE GEAR (LOADING F)



SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment :
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	30−65g•cm (0.42−0.90 oz•inch)
FWD Back Tension		0.5−4.5g•cm (0.01−0.06 oz•inch)
REV	CQ-102RC	30−65g•cm (0.42−0.90 oz•inch)
REV Back Tension		0.5−4.5g•cm (0.01−0.06 oz•inch)
FF, REW	CQ-201B	60−200g•cm (0.83−2.78 oz•inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 90g (more than 3.18 oz)
REV	CQ-403R	

SECTION 5
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and AM (MW) Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

〈Set the Test Mode〉

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for two seconds.
5. Then the display indicates all lights, the test mode is set.

〈Release the Test mode〉

1. Push the "OFF" button.

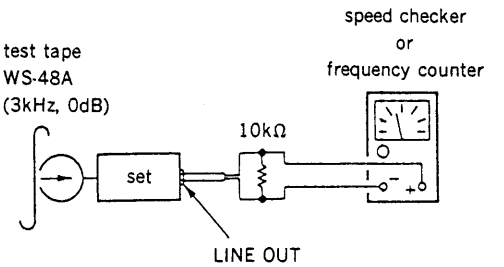
See the adjustment location from on page 22 for the adjustment.

DECK SECTION　**0dB=0.775V**

Tape Speed Adjustment

Procedure :

1. Put the set into the FWD PB mode.



Specification : Constant speed

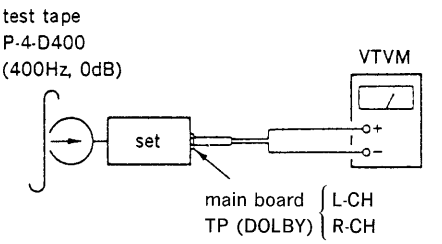
Speed checker	Frequency counter
−1.5 to +2.5%	2,955 to 3,075Hz

Adjustment Location : See page 22.

DOLBY Level Adjustment

Setting :

Preset [7] (DOLBY) button : OFF
SEL (BAS) button : Center
SEL (TRE) button : Center
SEL (BAL) button : Center
SEL (VOL) button : Maximum



Procedure :

1. Put the set into the FWD PB mode.
2. Adjust RV101 (L-CH) and RV201 (R-CH) so that VTVM reading is −6±0.5 dB (0.37 to 0.41V).

Adjustment Location : See page 22.

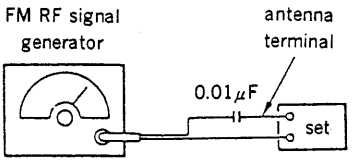
TUNER SECTION | **0dB=1μV**

Cautions during repair
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

FM Auto Scan/Stop Level Adjustment

Setting :

FM button (C610) : FM
TUNER button (C620) : FM
Frequency Select switch (E model) : 10k

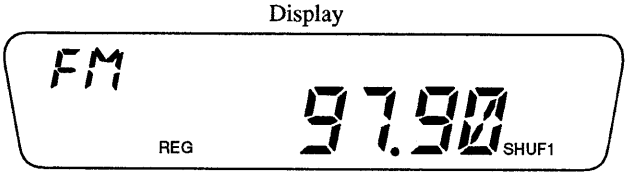


Carrier frequency : 97.90MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 1kHz, 75kHz deviation

Procedure :

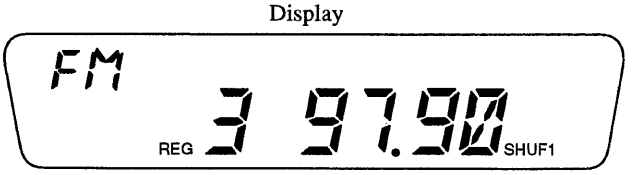
1. Set to the test mode. (See page 19.)
2. Push the [FM] button (C610) or [TUNER] button (C620) and set to FM.

Display



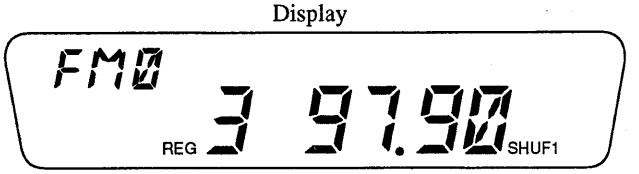
3. Push the preset [3] button.

Display



4. Adjust with the volume RV3 on TU1 so that the "FM" indication turns to "FM0" indication on the display window.
   But, in case of already indicated "FM0", turn the RV3 so that put out light "0" indication and adjustment.

Display

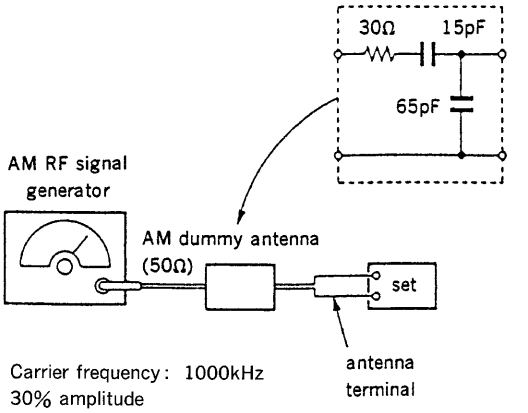


Adjustment Location : See page 22.

AM (MW) Auto Scan/Stop Level Adjustment

Setting :

AM button (C610 : US, Canadian model) : AM
MW/SW button (E model) : MW
TUNER button (C620) : AM
Frequency Select switch (E model) : 10k

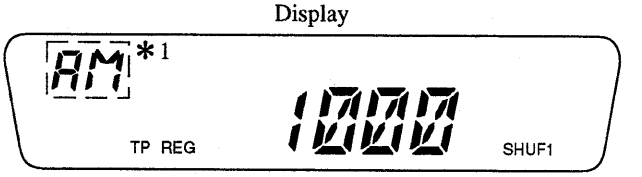


Carrier frequency : 1000kHz
30% amplitude modulation by 400Hz signal
Output level : 33dB (44.7μV)

Procedure :

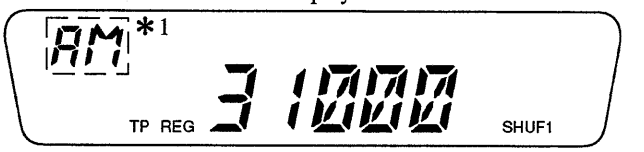
1. Set to the test mode. (See page 19.)
2. Push the [AM] button (C610 : US, Canadian model) or [MW/SW] button (E model) or [TUNER] button (C620) and set to AM (US, Canadian model) or MW (E model).

Display



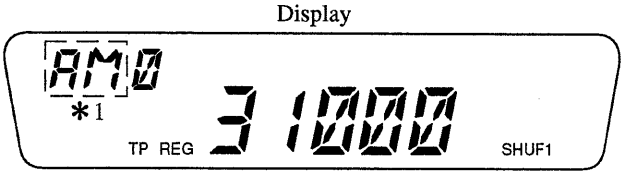
3. Push the preset [3] button.

Display



4. Adjust with the volume RV1 on TU1 so that the "AM" indication turns to "AM0" indication on the display window.
   But, in case of already indicated "AM0", turn the RV1 so that put out light "0" indication and adjustment.

Display



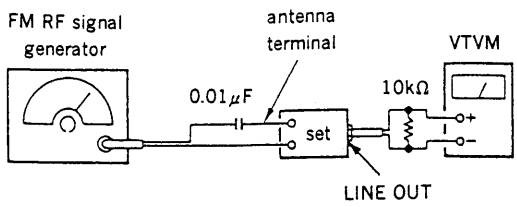
* 1 : E model is indicates "MW".

Adjustment Location : See page 22.

High Cut Control Effect Adjustment

Setting :

FM button (C610) : FM
TUNER button (C620) : FM



Carrier frequency : 97.90MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 10kHz, 40kHz deviation

Procedure :

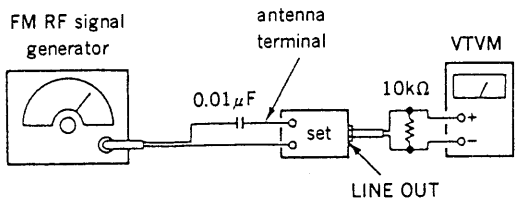
1. Tune the 97.90MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV2 on TU1 so that the output level is (A)−5dB then signal generator input set to 20dB.

Adjustment Location : See page 22.

FM Noise Focus Adjustment

Setting :

FM button (C610) : FM
TUNER button (C620) : FM



Carrier frequency : 97.90MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 75kHz deviation

Procedure :

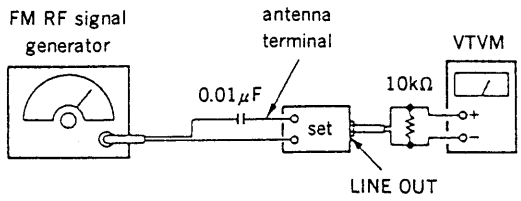
1. Tune the 97.90MHz.
2. The then output level is supposing that (B) dB.
3. Adjust with the volume RV5 on TU1 so that the output level is (B)−30dB then signal generator input set to −20dB.

Adjustment Location : See page 22.

FM Stereo Separation Adjustment

Setting :

FM button (C610) : FM
TUNER button (C620) : FM



Carrier frequency : 97.90MHz
Output level : 70dB (3.2mV)
Mode : stereo
Modulation : main : 1kHz, 20kHz deviation (26%)
sub : 1kHz, 20kHz deviation (26%)
19kHz pilot : 7.5kHz deviation (10%)

Procedure :

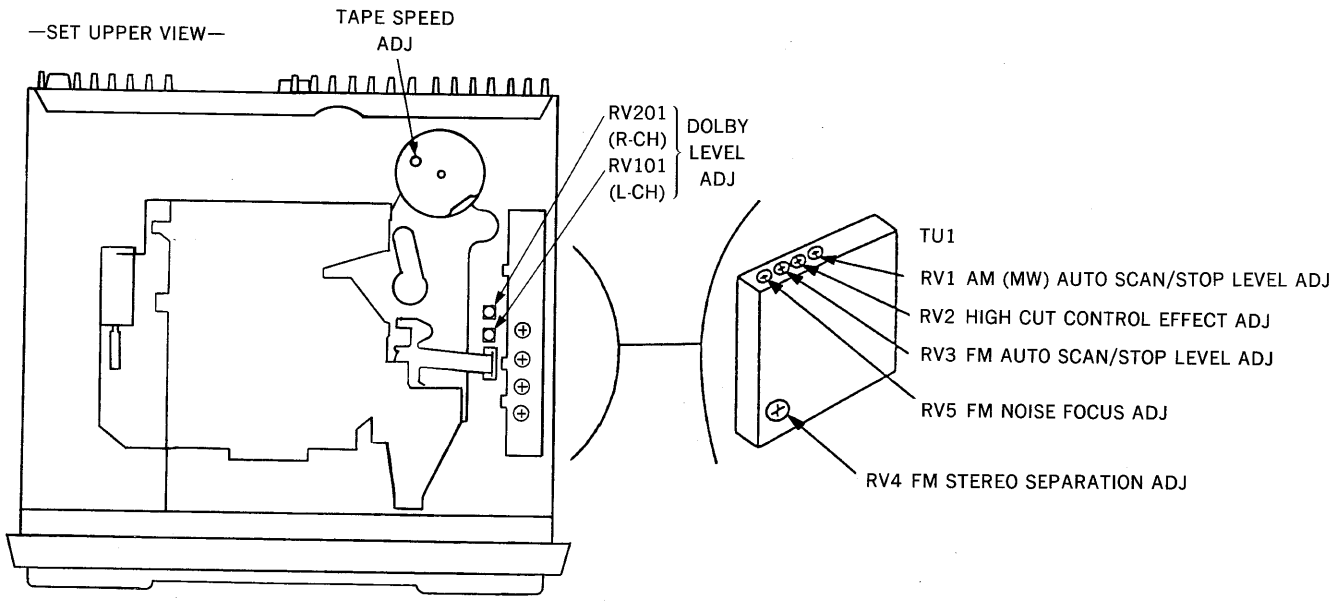
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU1 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ
The separations of both channels should be equal.

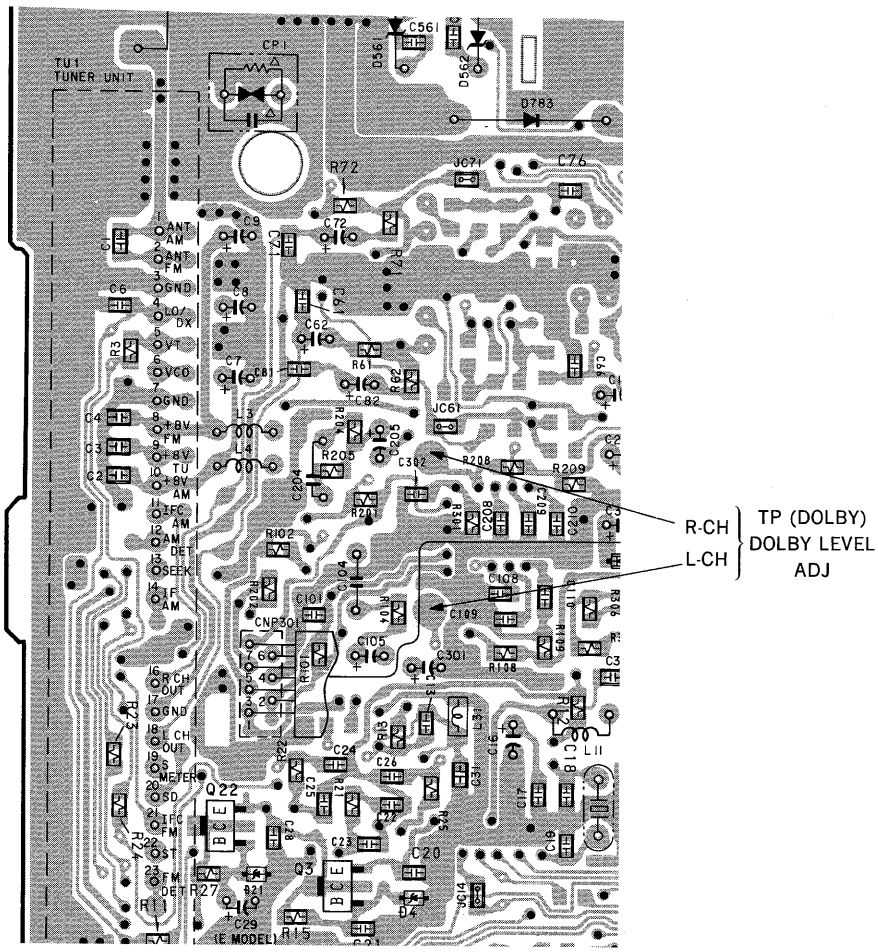
Specification : Separation more than 30dB

Adjustment Location : See page 22.

Adjustment Location :



—main board (side B)—



SECTION 6
DIAGRAMS

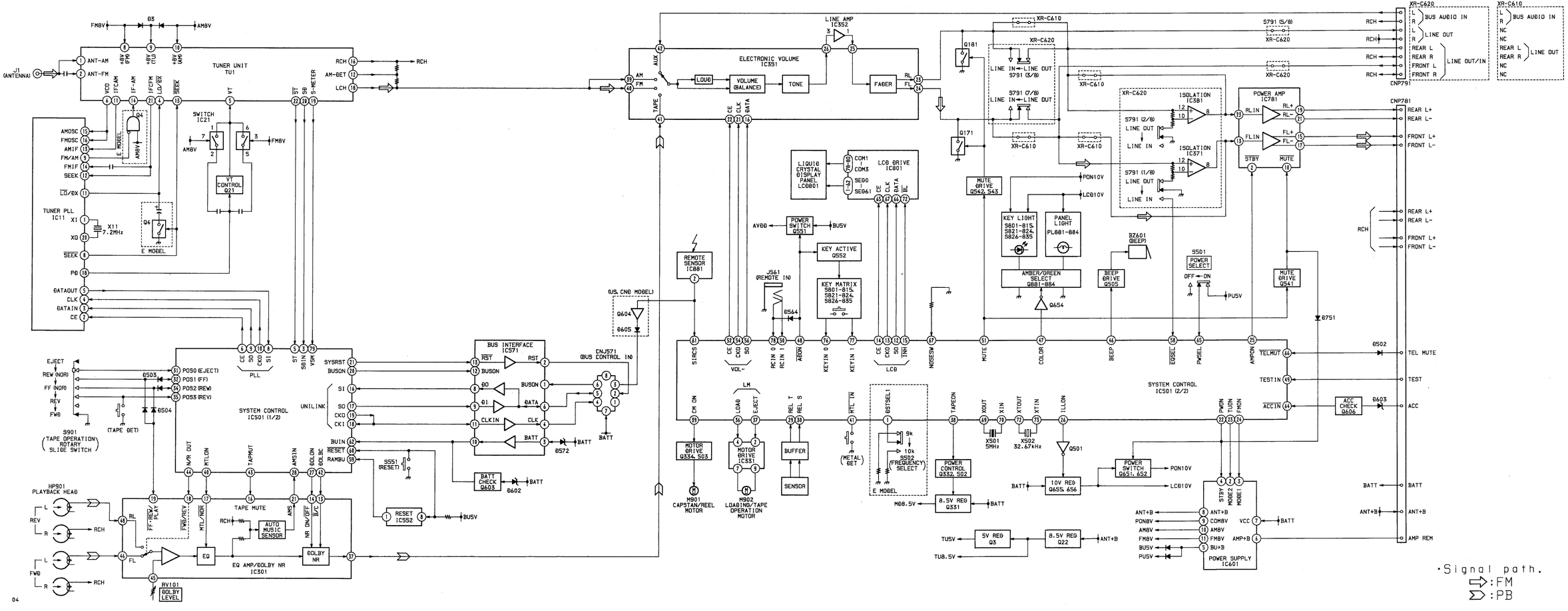
6-1. IC PIN DESCRIPTION

• IC501 μPD78058GC-043-3B9 (Ststem Control)

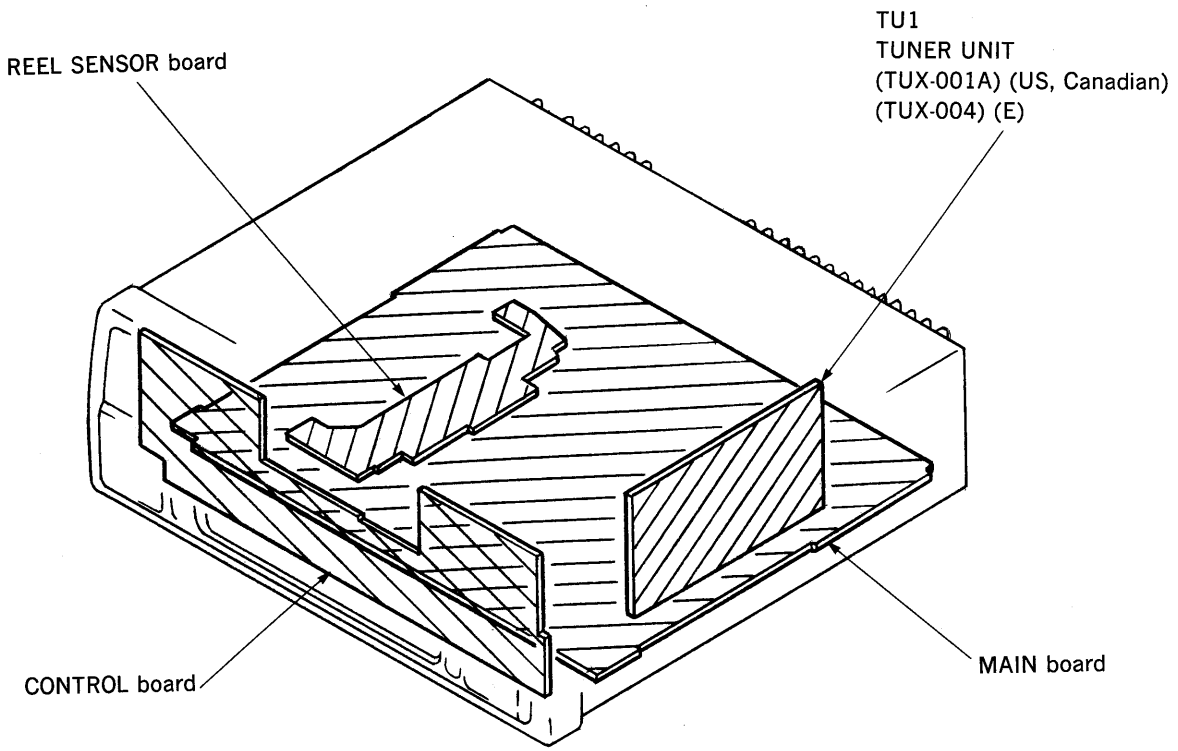
Pin No.	Pin Name	I/O	Pin Description
1	DSTSEL1	I	Destination the first setting A/D input.
2	F-SEL	I	Slave and function select the first setting
3	SD IN	I	Station detector detect input
4	AVSS	—	GND
5	ST	I/O	Use a thing stereo input and monaural output.
6	PLLCE	O	PLL serial chip enable output
7	AVREF	—	D/A conversion reference power supply voltage
8	PLLSI	I	PLL serial data input
9	PLLSO	O	PLL serial data output
10	PLLCKO	O	PLL serial clock output
11	NC	—	Not used. Connect to GND.
12	LCDSO	O	LCD serial data output
13	LCDCKO	O	LCD serial clock output
14	LCDCE	O	LCD chip enable output
15	$\overline{\text{LCDINH}}$	O	LCD blank display control output
16	UNISI	I	Serial data input
17	UNISO	O	Serial data output
18	UNICKI	I	Serial clock input
19	UNICKO	O	Serial clock output
20	BUSON	O	BUS ON control output
21	SYSRST	O	System reset control output
22	PW ON	O	System power control output
23	TUNON	O	Tuner power control output
24	FM ON	O	FM power control output
25	AMPON	O	Power amplifier power control output
26	ILLON	O	Illumination power control output
27	DOLON	I/O	DOLBY control input/output
28	AMSIN	I	At AMS, music with/without detect input
29	REL T	I	Reel table forward rotation detect input
30	REL S	I	Reel table reverse rotation detect input
31, 32	POS0, 1	I	Position signal detect input
33	GND	—	GND
34, 35	POS2, 3	I	Position signal detect input
36	LM LOD	O	Loading motor control output (Loading direction : forward)
37	LM EJ	O	Loading motor control output (Eject direction : reverse)
38	TAPEON	O	Tape power control output
39	CM ON	O	Capstan motor control output
40	MTLON	I/O	Metal control input/output
41	$\overline{\text{MTLIN}}$	I	Auto metal detect input
42	DOLBC	I/O	DOLBY B/C select control input/output
43	TAPMUT	O	Tape mute control output
44	N/ROUT	O	Forward/reverse detect output
45	DIMMER	I/O	Dimmer control input/output
46	BEEP	O	Buzzer control output

Pin No.	Pin Name	I/O	Pin Description
47	COLOR	I/O	Illumination color select control input/output
48	$\overline{\text{AD ON}}$	O	A/D select power control output
49	TESTIN	I	Test mode setting input
50	RC IN1	I	Rotary commandr input
51	MUT	O	System mute control output
52	VOLCE	O	Electron volume serial chip enable output
53	SUBCE	O	Sub volume serial chip enable output. This set is not used.
54	VOLCKO	O	Electron volume serial clock output
55	SUBCKO	O	Sub volume serial clock output. This set is not used.
56	VOLSO	O	Electron volume serial data output
57	MTLSEL	I	Auto metal function with/without the first setting
58	$\overline{\text{EQ SEL}}$	I	Equalizer connection with/without the first setting
59	RAMBU	I	RAM reset detect input
60	$\overline{\text{RESET}}$	—	Reset input
61	SIRCS	I	Remove commander input
62	BU IN	I	Back up power detect input
63	KEYACK	I	Key input acknowledge
64	$\overline{\text{ACCIN}}$	I	Accessory power detect input
65	PW SEL	I	Power select the first setting
66	$\overline{\text{TELMUT}}$	I	Telephone mute detect input
67	NOSESW	I	Front panel with/without detect input
68	VDD	—	Microcomputer power supply voltage
69	X OUT	—	Main ceramic osillator output (5MHz)
70	X IN	—	Main ceramic osillator input (5MHz)
71	GND	—	GND
72	XT OUT	—	Sub crystal oscillator output (32.67kHz)
73	XT IN	—	Sub crystal oscillator input (32.67kHz)
74	AVDD	—	A/D conversion power supply voltage
75	AVREF	—	A/D conversion reference power supply voltage
76	KEYIN0	I	Key input
77	KEYIN1	I	
78	RC IN0	I	Rotary commander input
79	VSM	I	FM/AM common signal meter A/D conversion input
80	DSTSEL0	I	Destination the first setting A/D input.

6-2. BLOCK DIAGRAM



6-3. CIRCUIT BOARDS LOCATION



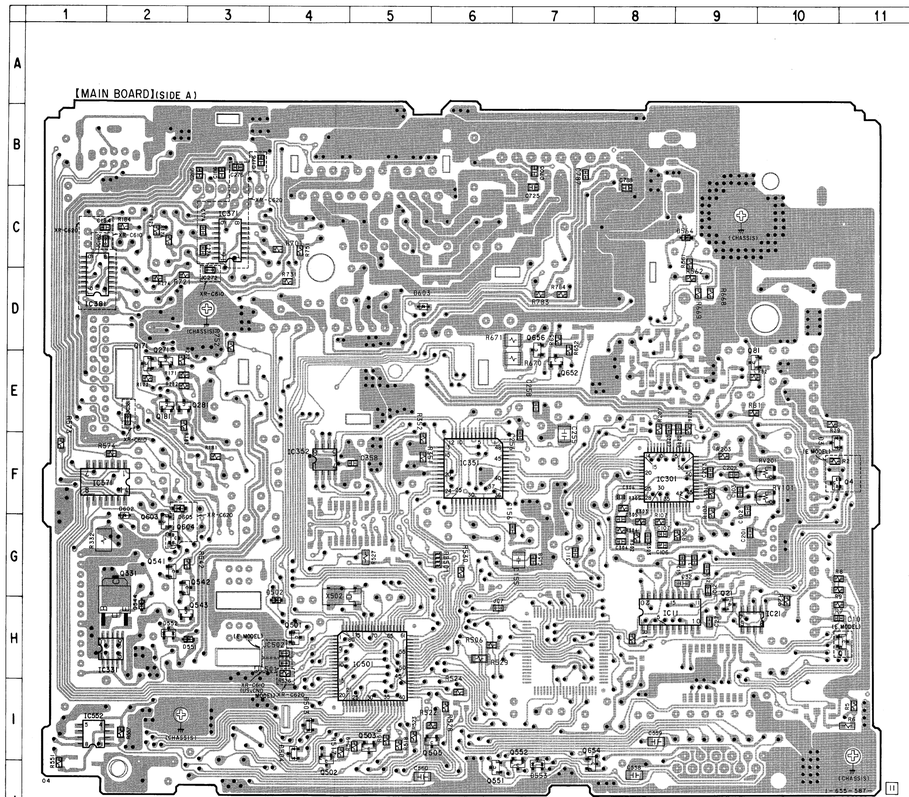
6-4. PRINTED WIRING BOARDS—MAIN SECTION— • Refer to page 44 for Semiconductor Lead Layouts.

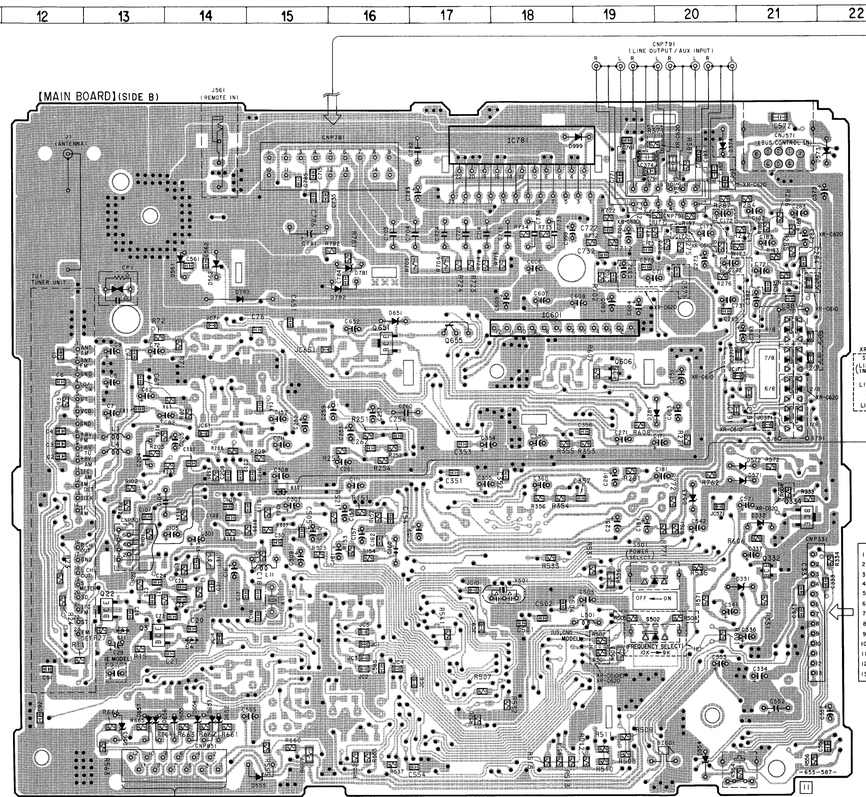
• **Semiconductor Location**

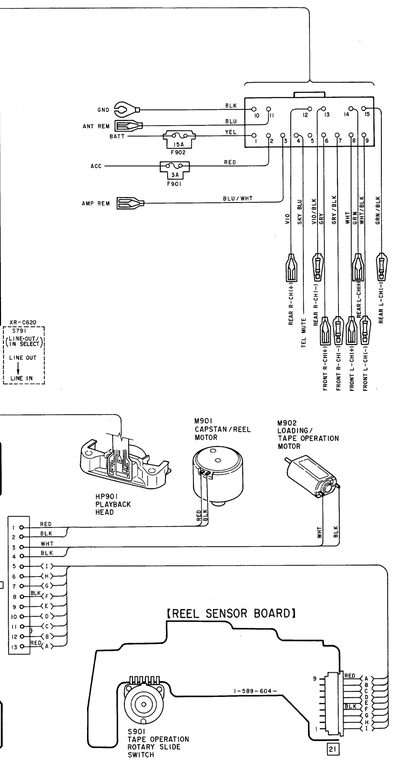
Ref. No.	Location	Ref. No.	Location
D3	F-10	IC301	F-8
D4	H-14	IC331	H-2
D21	H-13	IC351	F-6
D301	F-15	IC352	F-4
D331	G-20	(IC371)	C-3
D332	G-21	(IC381)	D-1
D502	G-4	IC501	H-5
D503	I-4	IC552	I-1
D504	I-4	IC571	F-1
D543	F-20	IC601	D-18
D544	H-2	IC781	B-18
D551	H-3		
D552	H-2	<Q1>	H-10
D553	J-7	Q3	H-13
D554	I-20	<Q4>	F-10
D555	J-15	Q21	G-9
D561	C-14	Q22	H-13
D562	C-14	Q81	D-9
D563	I-13	Q171	E-2
D564	C-9	Q181	E-2
D571	F-20	Q271	E-2
D572	F-20	Q281	E-2
D573	B-21	Q331	G-2
D574	B-20	Q332	G-21
D602	F-2	Q334	F-21
D603	D-5	Q501	H-4
D605	F-2	Q502	I-4
D651	D-16	Q503	I-5
D652	I-14	Q505	I-5
D653	I-14	Q541	G-2
D654	I-14	Q542	G-3
D655	I-14	Q543	H-2
D656	I-13	Q551	J-6
D657	I-13	Q552	I-7
D751	E-19	Q603	G-2
D781	D-16	(Q604)	G-2
D782	D-16	Q606	E-19
D783	D-14	Q651	D-16
D999	B-18	Q652	E-7
		Q654	I-7
IC11	H-8	Q655	D-17
IC21	H-9	Q656	D-7

( ): XR-C620 only
< >: E model only

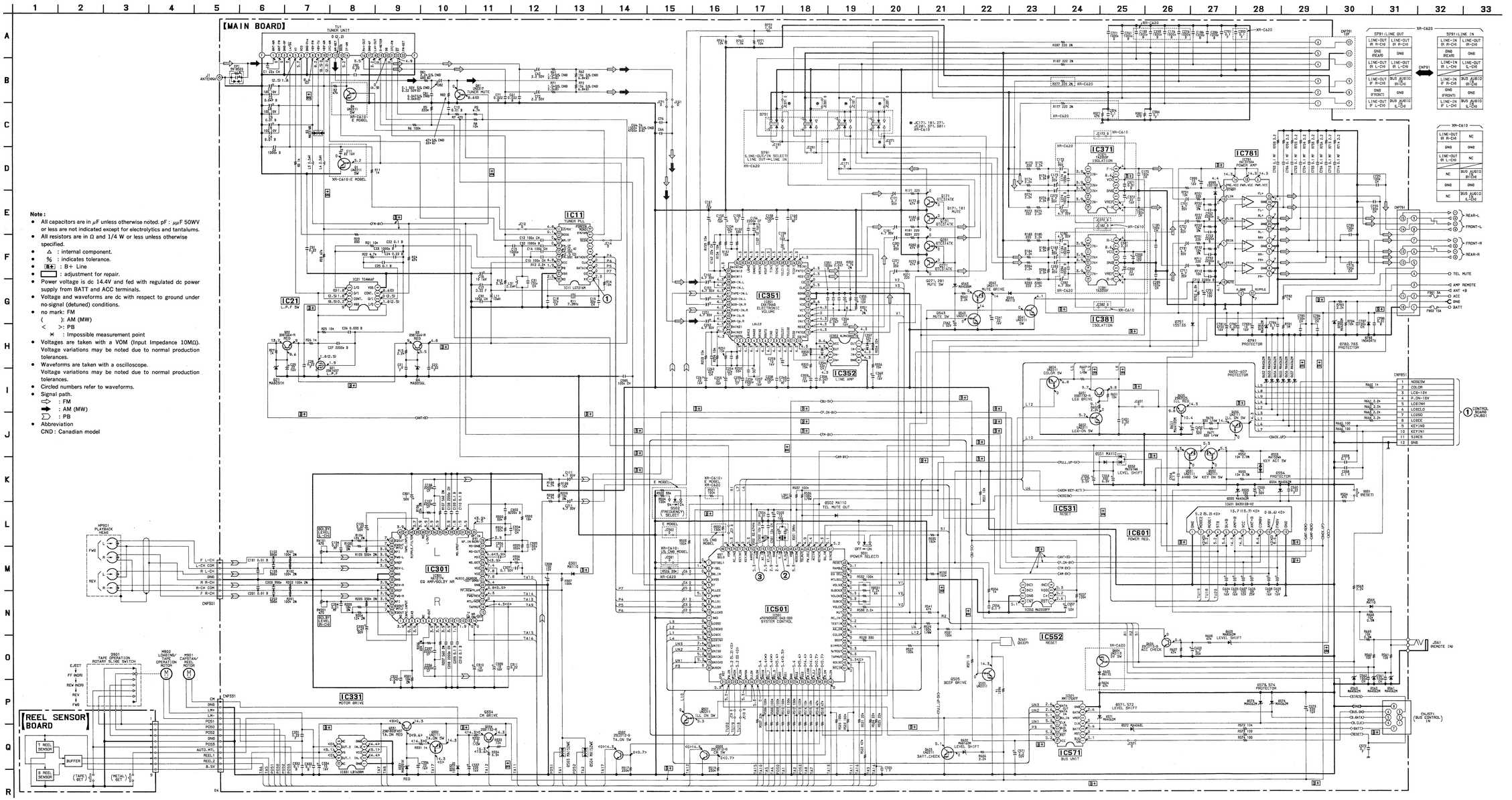
Note:
- ○— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen. (The other layer's patterns are not indicated.)
- Abbreviation
  CND: Canadian model



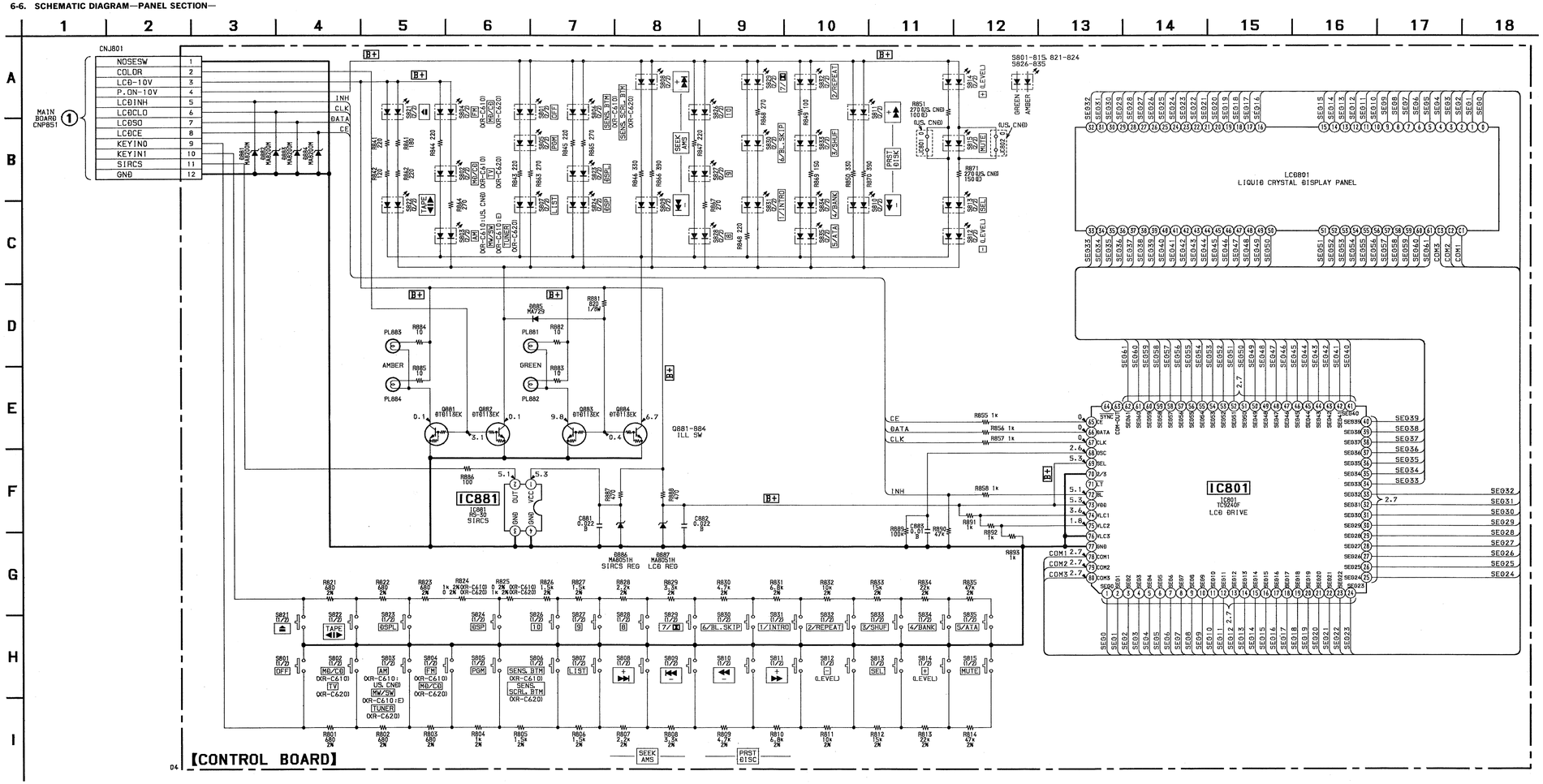




6-5. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 45 for IC Block Diagrams.


【MAIN BOARD】
【REEL SENSOR BOARD】
Note :
• All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
• All resistors are in Ω and 1/4 W or less unless otherwise specified.
• △ : internal component.
• % : indicates tolerance.
• B+ : B+ Line
• : adjustment for repair.
• Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
• Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
• no mark: FM
( ): AM (MW)
< >: PB
✕ : Impossible measurement point
• Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
• Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
• Circled numbers refer to waveforms.
• Signal path.
⇨ : FM
➡ : AM (MW)
▷ : PB
• Abbreviation
CND : Canadian model
• Waveforms
1 7.2MHz 2.1Vp-p IC11 ①
2 5MHz 3Vp-p IC501 ⑳
3 32.67kHz 1.6Vp-p IC501 ㉓
IC11 LV2210M
IC21 L.P.F SW
IC301 MC14576B EQ AMP/VOL/DIY NR
IC331 MOTOR DRIVE
IC351 LA6532M ELECTRONIC VOLUME
IC352 LINE AMP
IC371 ISOLATION
IC381 ISOLATION
IC501 AN6980SDC-349-389 SYSTEM CONTROL
IC531 RESET
IC552 RESET
IC571 BUS UNIT
IC601 POWER REG.
IC781 LA7836 POWER SW
6781 PROTECTOR
6782.7&8 PROTECTOR
6554 PROTECTOR
6571~574 LEVEL SHIFT
6572 MASSIVE
6574 MASSIVE
6601 RESET
6602 MASSIVE
6603 MASSIVE
6604 MASSIVE
6605 MASSIVE
6606 MASSIVE
6607 MASSIVE
6608 MASSIVE
6609 MASSIVE
6610 MASSIVE
6611 MASSIVE
6612 MASSIVE
6613 MASSIVE
6614 MASSIVE
6615 MASSIVE
6616 MASSIVE
6617 MASSIVE
6618 MASSIVE
6619 MASSIVE
6620 MASSIVE
6621 MASSIVE

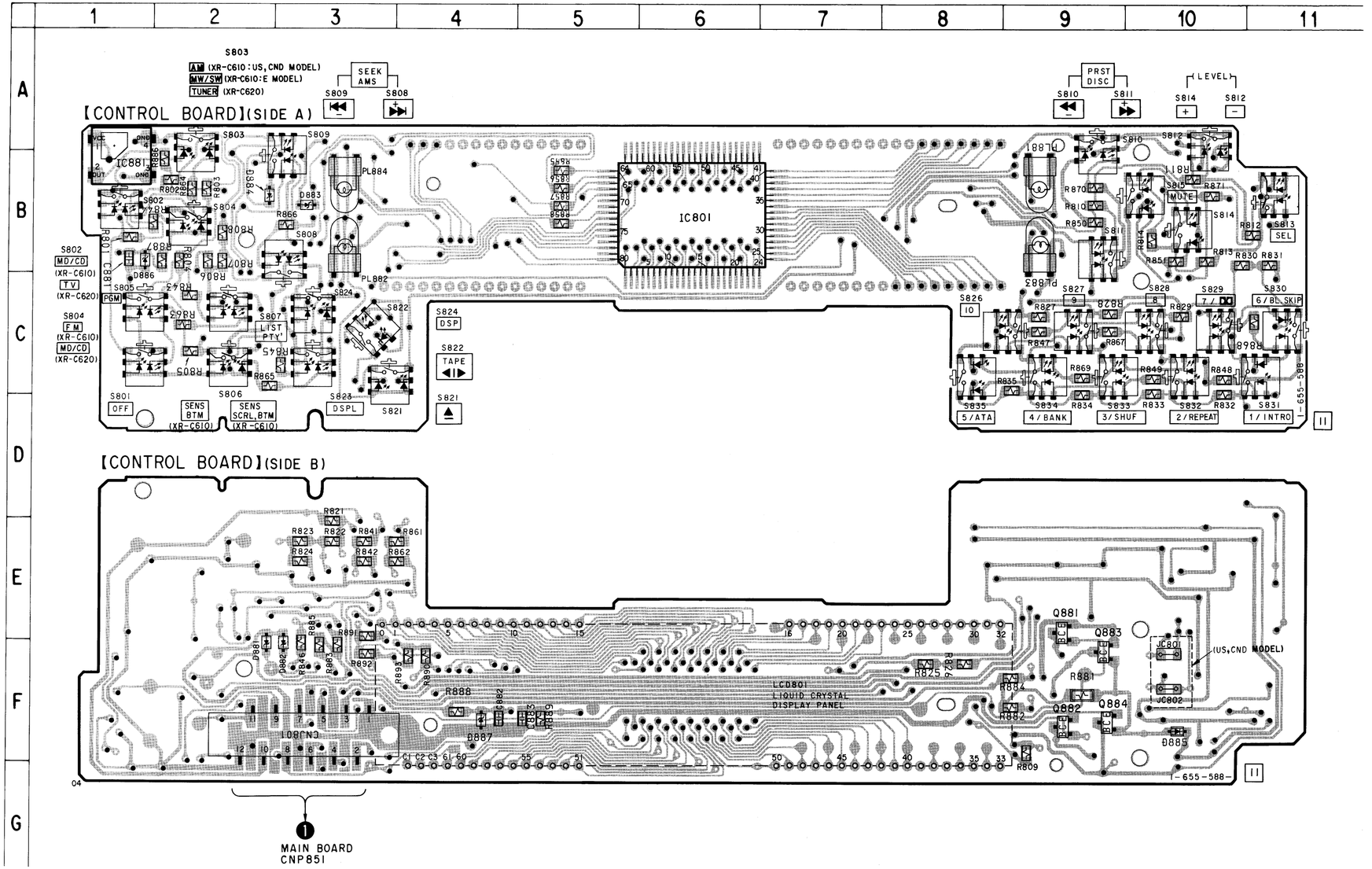
6-6. SCHEMATIC DIAGRAM—PANEL SECTION—



Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC termianls.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  CND : Canadian model

6-7. PRINTED WIRING BOARD—PANEL SECTION— • Refer to page 44 for Semiconductor Lead Layouts.



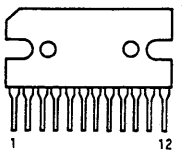
• Semiconductor Location

Ref. No.	Location
D881	F-2
D882	F-3
D883	B-3
D884	B-2
D885	F-10
D886	B-1
D887	F-4
IC801	B-6
IC881	B-1
Q881	E-9
Q882	F-9
Q883	E-9
Q884	F-9

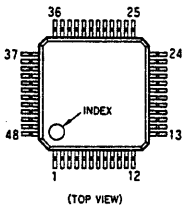
Note:
- ○— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen. (The other layer's patterns are not indicated.)
- Abbreviation
  CND : Canadian model

6-8. SEMICONDUCTOR LEAD LAYOUTS

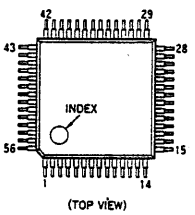
BA3910B-V2



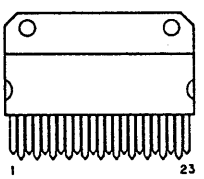
CXA1946Q



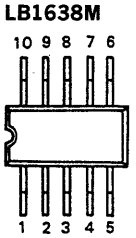
HA12174



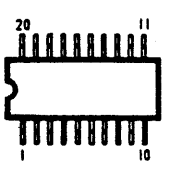
HA13150A



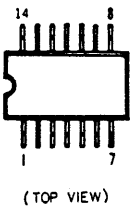
LB1638M



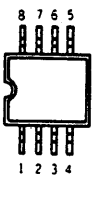
LC7216M



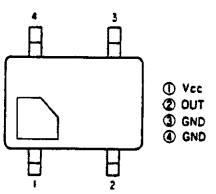
MM1175XFF



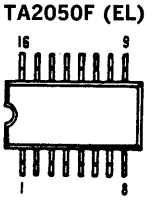
M62008FP-T1
NJM4580E-D
TC4W66F



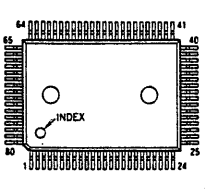
RS-30E-T



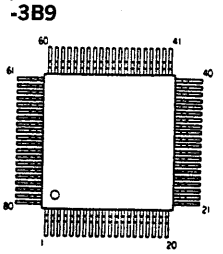
TA2050F (EL)



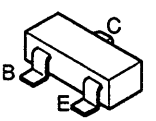
TC9240F



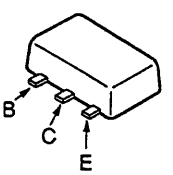
μPD78058GC-043
-3B9



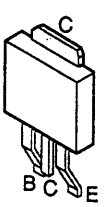
DTC314TKH04
DTD113EK
UN2111
UN2113
UN2211
UN2217
2SC2712-YG



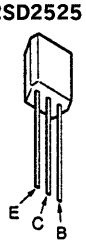
2SB1115A-YQ
2SD1615A-GP



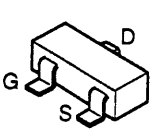
2SD1802FAST-TL



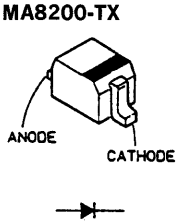
2SD2525



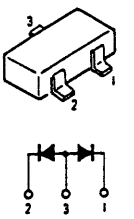
2SK1657-T1B



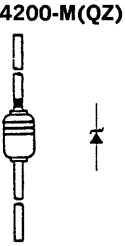
MA110
MA8051-H
MA8160-M
MA8200-TX



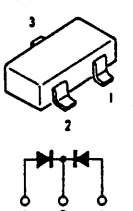
MA152WA
MA721WA-TX



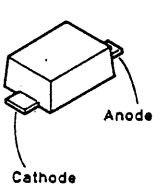
MA4039-M(QZ)
MA4062-M(QZ)
MA4068-L(QZ)
MA4091-H(QZ)
MA4100-M(QZ)
MA4200-M(QZ)



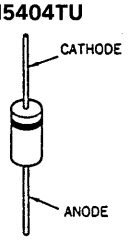
MA721WK-(TX)
1SS184



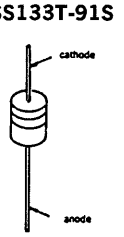
MA729
MA8056-L
MA8062-M
MA8091-M



1N5404TU

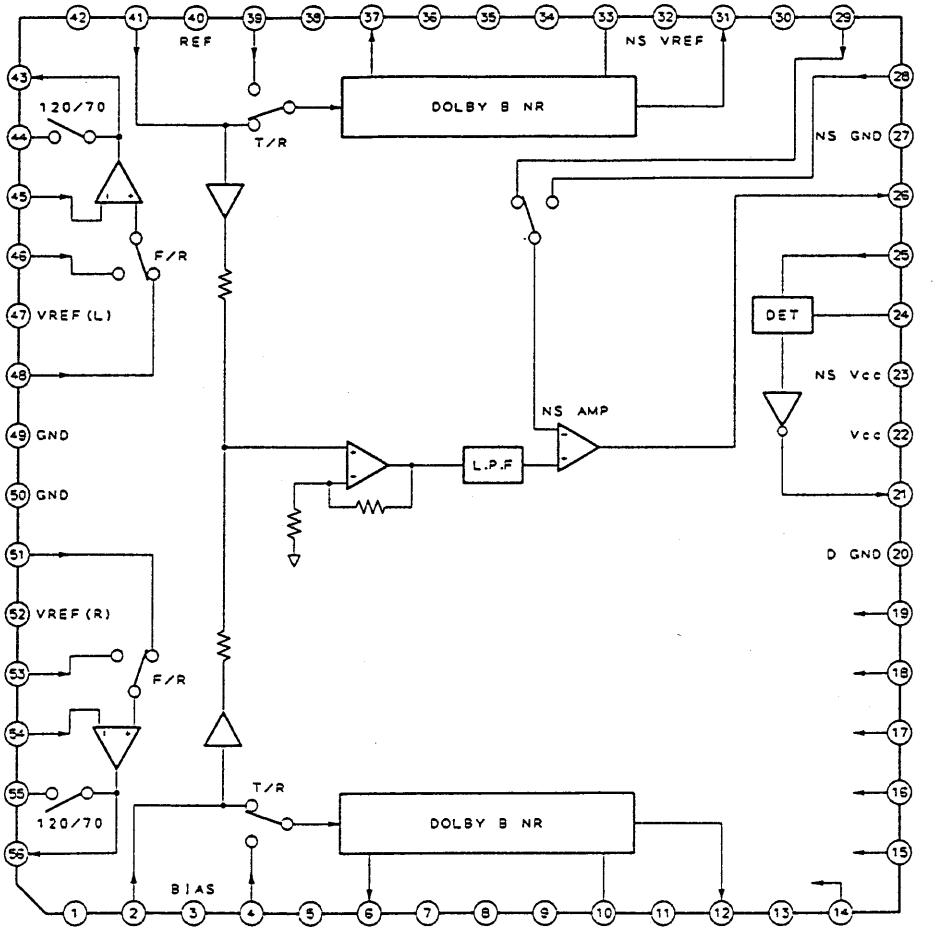


1SS133T-91S

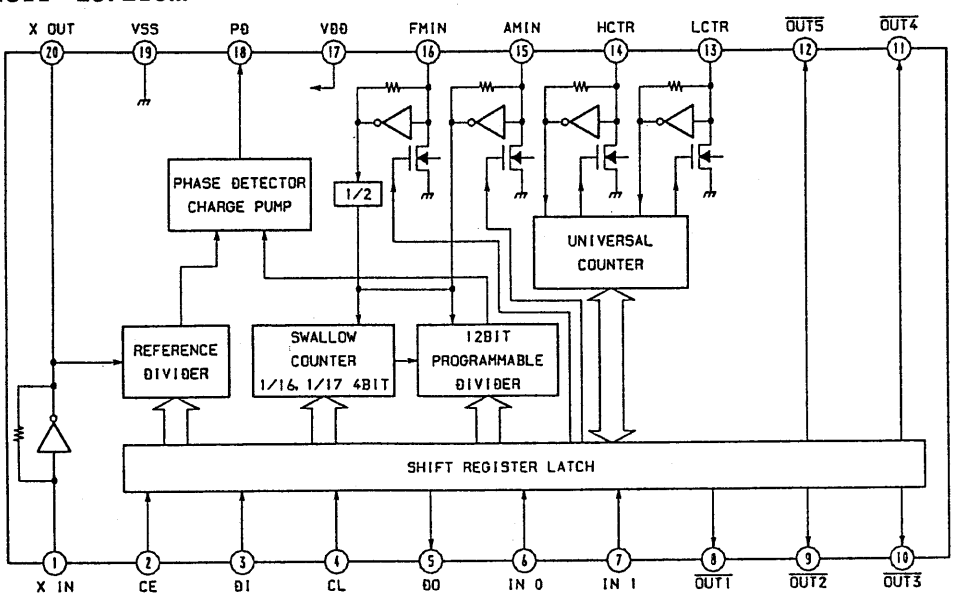


• **IC Block Diagrams**

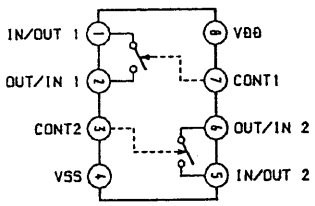
IC301 HA12174



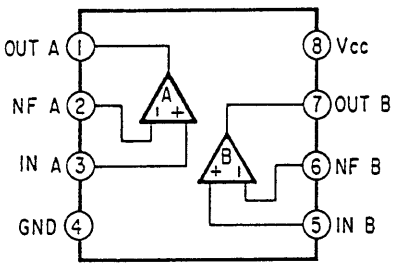
IC11 LC7216M



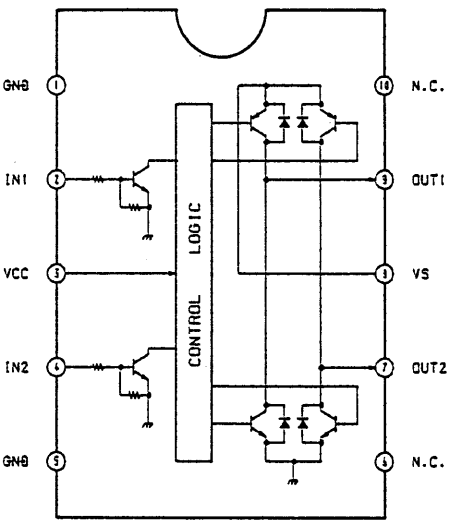
IC21 TC4W66F



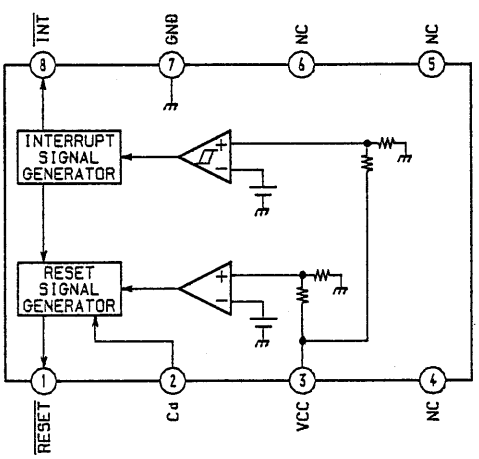
IC352 NJM4580E-D



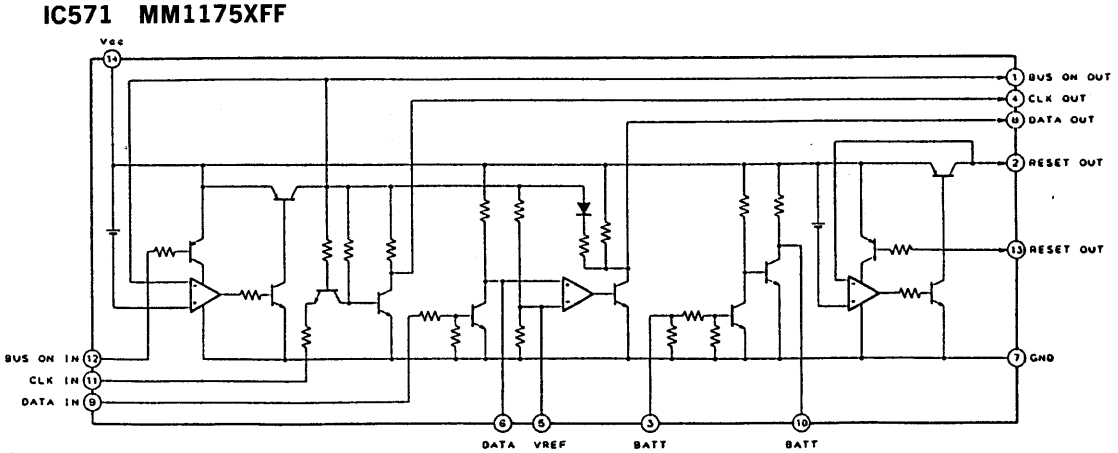
IC331 LB1638M



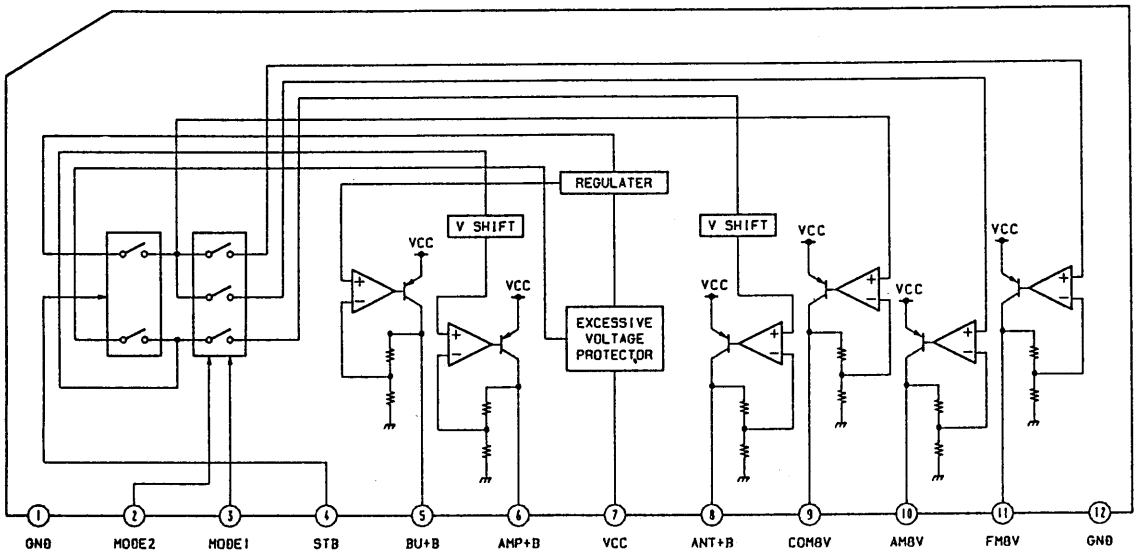
IC552 M62008FP



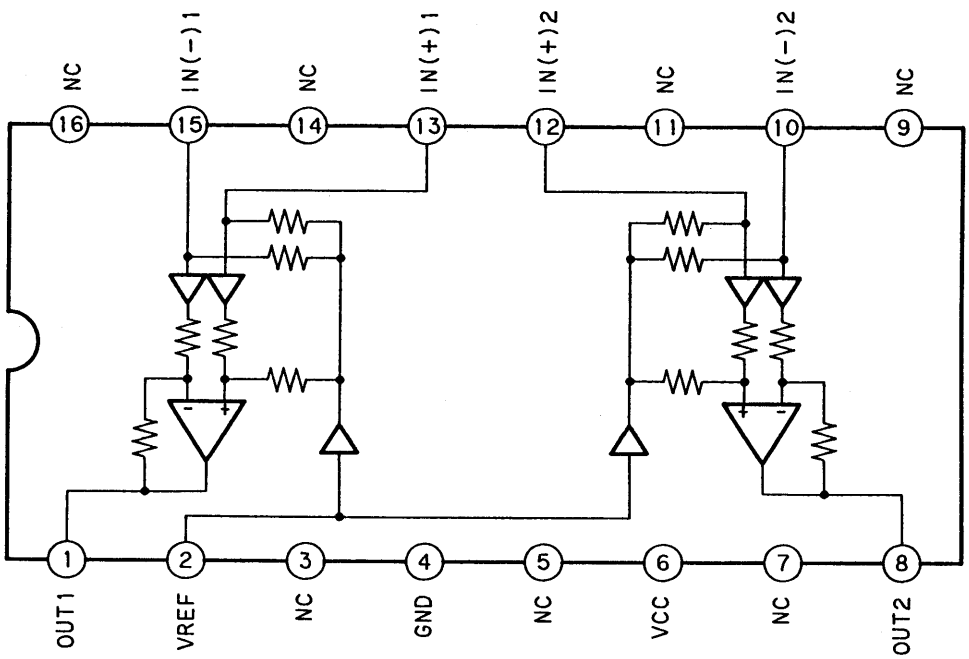
IC571 MM1175XFF



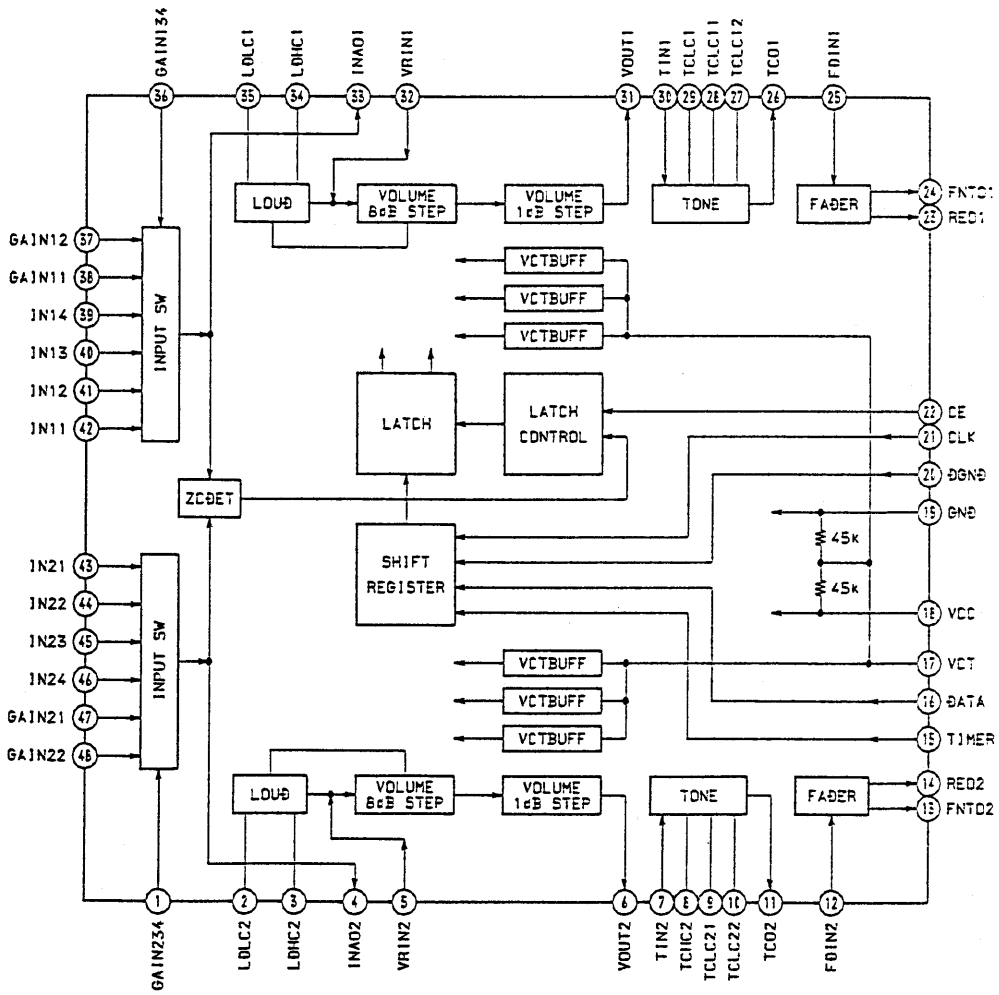
IC601 BA3910B-V2



IC371, 381 TA2050F (XR-C620)



IC351 CXA1946Q

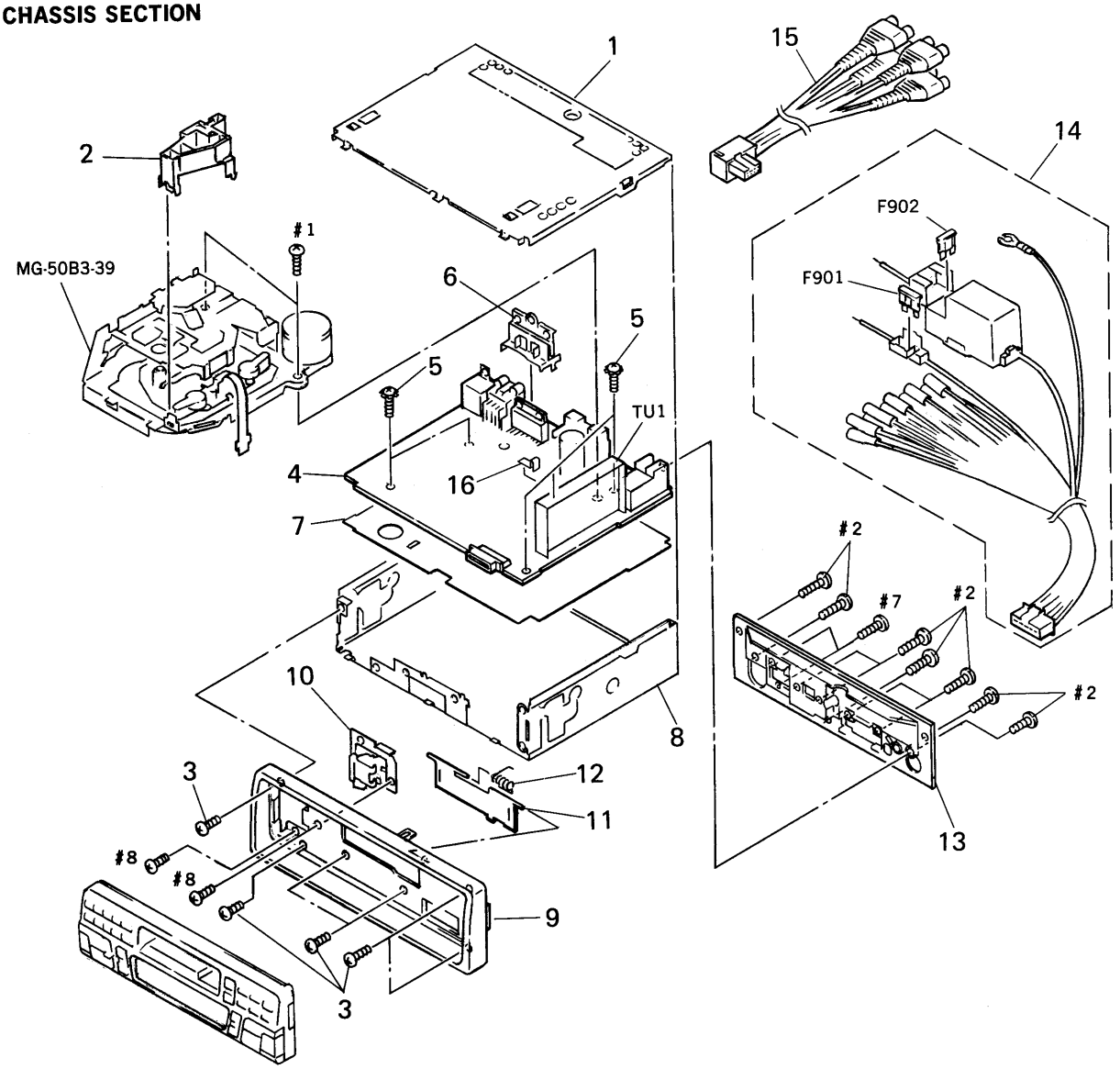


SECTION 7
EXPLODED VIEWS

NOTE:

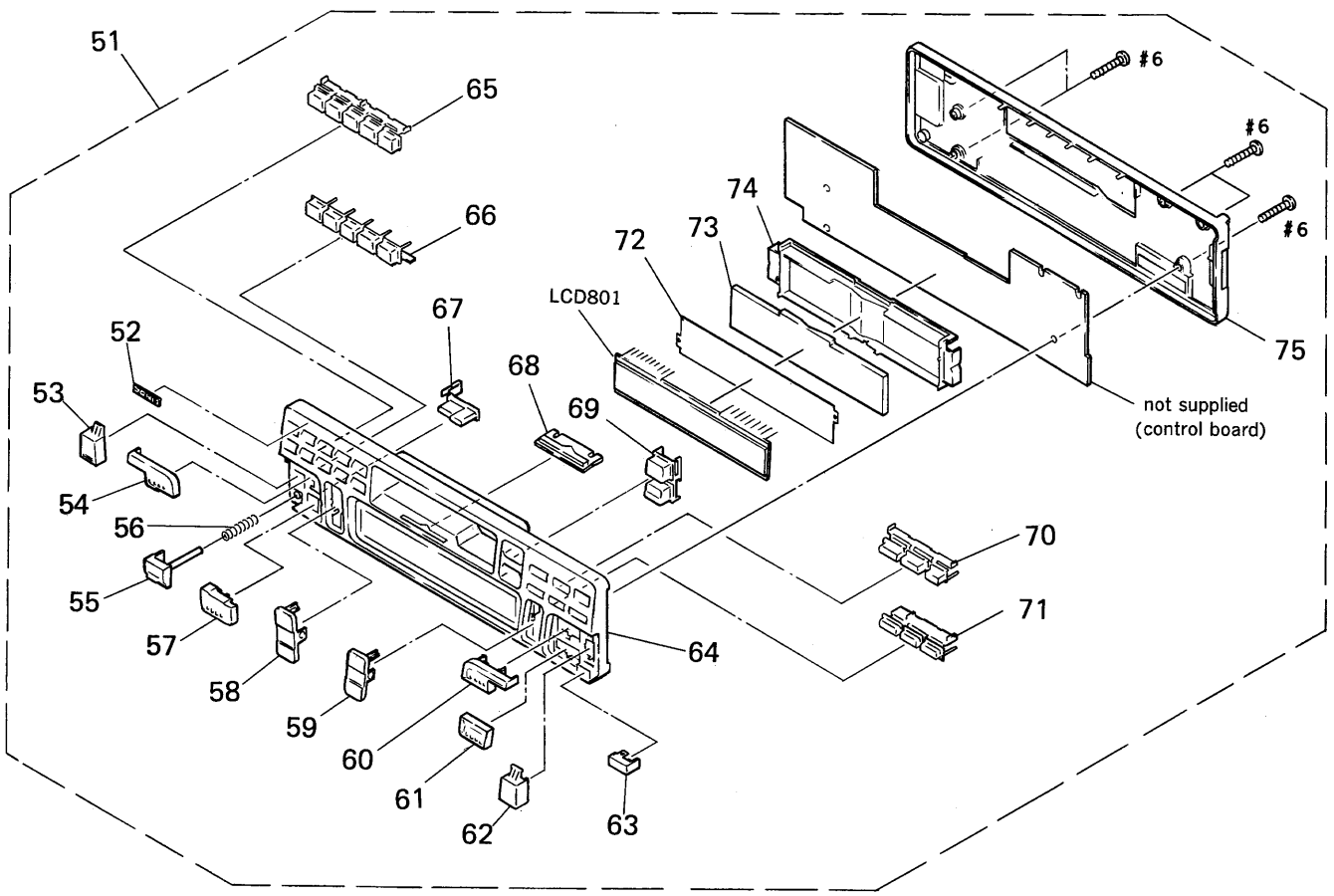
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

7-1. CHASSIS SECTION



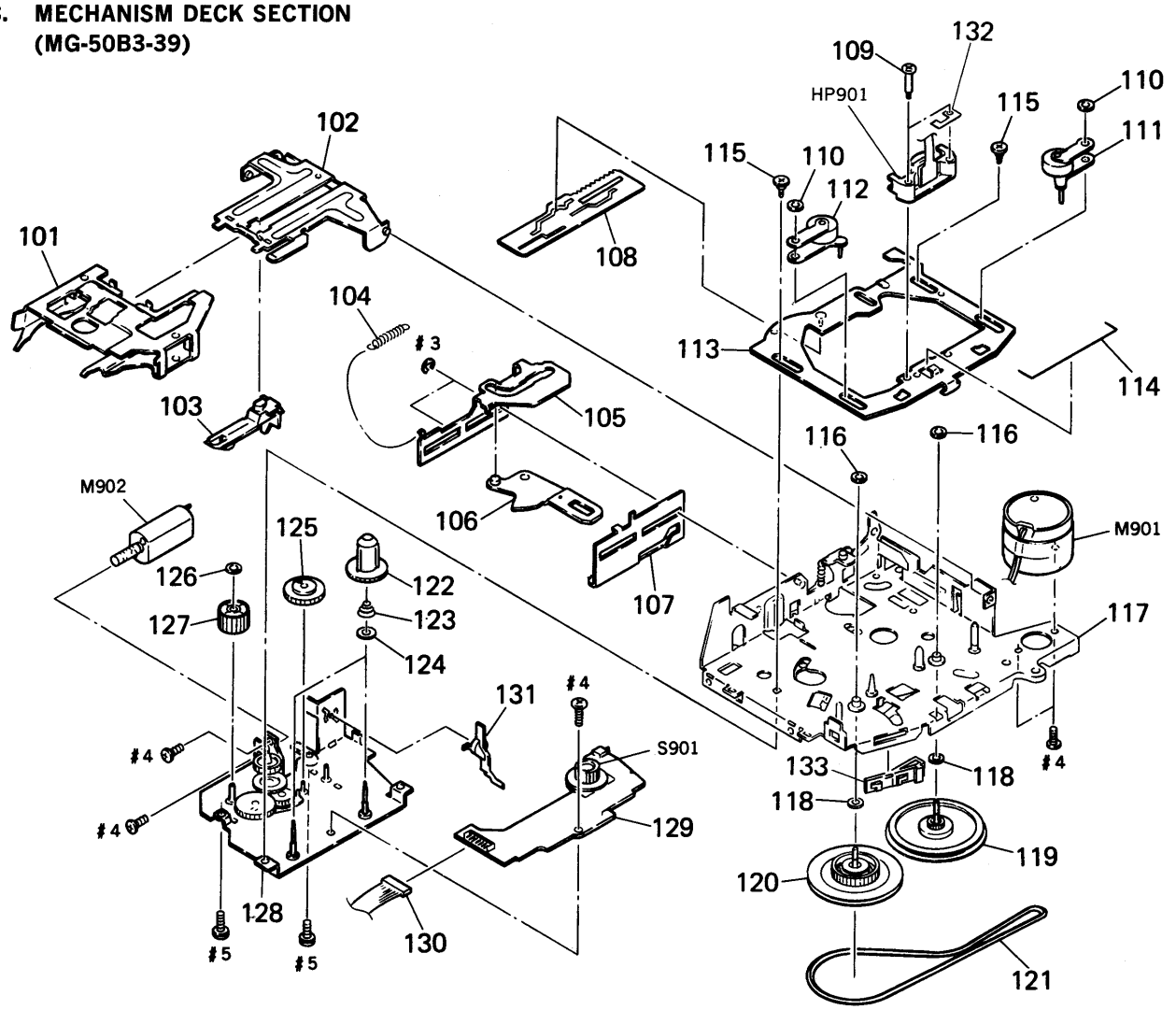
Ref. No.	Part No.	Description	Remark
* 1	X-3369-736-1	COVER ASSY	
2	3-916-872-01	GUIDE	
3	3-907-995-01	SCREW (2.6X8) (BZN), +PTT	
* 4	A-3298-532-A	MAIN BOARD, COMPLETE (C620)	
* 4	A-3298-534-A	MAIN BOARD, COMPLETE (C610:US, Canadian)	
* 4	A-3298-535-A	MAIN BOARD, COMPLETE (E)	
5	3-915-923-01	SCREW, GROUND POINT	
* 6	3-920-605-01	HEAT SINK (IC)	
* 7	3-920-609-01	INSULATOR	
* 8	X-3369-735-1	CHASSIS ASSY	
9	3-920-583-01	PANEL, SUB	
10	X-3367-636-1	LOCK ASSY	
11	3-922-165-01	DOOR, CASSETTE (US, Canadian)	
11	3-922-165-11	DOOR, CASSETTE (E)	
12	3-913-076-01	SPRING (C DOOR), TORSION	
* 13	3-920-604-01	HEAT SINK	
14	1-765-081-11	CORD (WITH CONNECTOR)	
15	1-769-448-21	CORD (WITH CONNECTOR) (AUDIO) (C620)	
15	1-769-449-11	CORD (WITH CONNECTOR) (AUDIO) (C610)	
* 16	3-355-209-01	PLATE (B), GROUND	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	
TU1	A-3282-003-A	TUNER UNIT (TUX-001A) (US, Canadian)	
TU1	A-3282-009-A	TUNER UNIT (TUX-004) (E)	

7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
* 51	A-3291-265-A	PANEL ASSY, FRONT (C620)	
* 51	A-3291-266-A	PANEL ASSY, FRONT (C610:US, Canadian)	
* 51	A-3291-267-A	PANEL ASSY, FRONT (E)	
52	3-904-194-01	EMBLEM (NO. 2.5), SONY	
53	3-920-594-01	BUTTON (SEL)	
54	3-920-592-01	BUTTON (+)	
55	3-920-596-01	BUTTON (RELEASE)	
56	3-920-608-01	SPRING (RELEASE)	
57	3-920-593-01	BUTTON (-)	
58	3-920-597-01	BUTTON (P/D)	
59	3-920-598-01	BUTTON (S/A)	
60	3-920-587-01	BUTTON (MD/CD) (C620)	
60	3-920-587-11	BUTTON (MD/CD) (C610)	
61	3-920-588-01	BUTTON (TUNER) (C620)	
61	3-920-588-11	BUTTON (TUNER) (C610:US, Canadian)	
61	3-920-588-21	BUTTON (TUNER) (E)	
62	3-920-589-01	BUTTON (TV) (C620)	
62	3-920-589-21	BUTTON (TV) (C610)	
63	3-920-600-01	FILTER (RAY CATCHER)	
64	X-3370-277-1	PANEL SUB ASSY (C620)	
64	X-3370-278-1	PANEL SUB ASSY (C610)	
65	3-920-585-01	BUTTON (PRE 1-5)	
66	3-920-586-01	BUTTON (PRE 6-10)	
67	3-920-595-01	BUTTON (MUTE) (US, Canadian)	
67	3-920-595-11	BUTTON (MUTE) (E)	
68	3-920-607-01	PLATE (C), LIGHT GUIDE	
69	3-920-599-01	BUTTON (EJECT)	
70	3-920-590-01	BUTTON (D.S.O)	
71	3-920-591-01	BUTTON (D.L.P) (C620)	
71	3-920-591-11	BUTTON (D.L.P) (C610)	
* 72	3-920-602-01	SHEET (REFLECTOR)	
* 73	3-920-610-01	PLATE (LCD), LIGHT GUIDE	
* 74	3-920-601-01	HOLDER (LCD)	
75	3-920-582-01	PANEL, FRONT BACK (C620)	
75	3-920-582-11	PANEL, FRONT BACK (C610)	
LCD801	1-810-775-11	DISPLAY PANEL, LIQUID CRYSTAL	

7-3. MECHANISM DECK SECTION (MG-50B3-39)



Ref. No.	Part No.	Description	Remark
101	3-912-881-01	HOUSING, CASSETTE	
* 102	3-912-882-01	HANGER, HOUSING	
103	3-912-884-01	CATCHER	
104	3-912-885-01	SPRING (LOADING LEVER), TENSION	
* 105	3-912-892-01	LEVER (B), LOADING	
* 106	3-912-883-01	ARM, SUCTION	
* 107	3-922-941-01	LEVER (A2), LOADING	
* 108	3-912-876-01	LEVER, MODE	
109	3-912-893-01	SCREW, HEAD FITTING	
110	3-579-788-01	WASHER, STOPPER	
111	X-3368-266-1	PINCH LEVER (F) ASSY	
112	X-3368-267-1	PINCH LEVER (R) ASSY	
* 113	X-3368-268-1	BASE ASSY, HEAD	
114	3-912-879-01	SPRING, PINCH PRESS	
115	3-912-897-01	SCREW (HB), STEP	
116	3-364-151-01	WASHER	
117	X-3368-984-1	CHASSIS (SV) ASSY (B), MECHANICAL	
118	3-701-437-21	WASHER	
119	3-913-825-01	FLYWHEEL (FZ)	

Ref. No.	Part No.	Description	Remark
120	X-3369-124-1	CLUTCH (S) ASSY, FR	
121	3-912-896-01	BELT	
122	X-3368-843-1	GEAR (SV) ASSY, REEL	
123	3-917-222-01	SPRING (B-T), COIL	
124	3-917-324-01	WASHER (B-T)	
125	3-912-888-01	GEAR (LOADING E)	
126	3-321-813-01	WASHER, COTTER POLYETHYLENE	
127	3-912-889-01	GEAR (LOADING F)	
128	X-3368-842-1	BRACKET (SV) ASSY, REEL	
129	1-589-604-21	REEL SENSOR BOARD	
130	1-765-460-12	CORD (WITH CONNECTOR)	
131	3-916-358-01	LEVER (TAPE IN 2)	
* 132	3-917-258-01	PLATE, GROUND	
133	3-919-553-01	GUIDE (BELT)	
HP901	1-500-157-21	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN (CAPSTAN/REEL)	
M902	X-3368-685-1	MOTOR ASSY, SUB (LOADING/TAPE OPERATION)	
S901	1-692-885-11	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

SECTION 8
ELECTRICAL PARTS LIST

CONTROL **MAIN**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
		CONTROL BOARD	
		**********	
		< DIODE >	
D881	8-719-017-98	DIODE MA8200-TX	
D882	8-719-017-98	DIODE MA8200-TX	
D883	8-719-017-98	DIODE MA8200-TX	
D884	8-719-017-98	DIODE MA8200-TX	
D885	8-719-420-51	DIODE MA729	
D886	8-719-422-43	DIODE MA8051-H	
D887	8-719-422-43	DIODE MA8051-H	
		< IC >	
IC801	8-759-246-16	IC TC9240F	
IC881	8-749-925-07	IC RS-30E-T	
		< TRANSISTOR >	
Q881	8-729-904-66	TRANSISTOR DTD113EK	
Q882	8-729-904-66	TRANSISTOR DTD113EK	
Q883	8-729-904-66	TRANSISTOR DTD113EK	
Q884	8-729-904-66	TRANSISTOR DTD113EK	
**********			
*	A-3298-532-A	MAIN BOARD, COMPLETE (C620)	
*	A-3298-534-A	MAIN BOARD, COMPLETE (C610:US, Canadian)	
*	A-3298-535-A	MAIN BOARD, COMPLETE (E)	
		**********	
		< DIODE >	
D3	8-719-040-04	DIODE MA721WK-(TX)	
D4	8-719-422-49	DIODE MA8056-L	
D21	8-719-422-97	DIODE MA8091-M	
D301	8-719-404-46	DIODE MA110	
D331	8-719-034-63	DIODE MA4091-H(QZ)	
D332	8-719-050-86	DIODE 1SS133T-91S	
D502	8-719-404-46	DIODE MA110	
D503	8-719-801-78	DIODE 1SS184	
D504	8-719-801-78	DIODE 1SS184	
D543	8-719-034-22	DIODE MA4039-M(QZ)	
D544	8-719-404-46	DIODE MA110	
D551	8-719-404-46	DIODE MA110	
D552	8-719-041-79	DIODE MA721WA-TX	
D553	8-719-400-20	DIODE MA152WA	
D554	8-719-034-46	DIODE MA4062-M(QZ)	
D555	8-719-034-46	DIODE MA4062-M(QZ)	
D561	8-719-034-46	DIODE MA4062-M(QZ)	
D562	8-719-034-46	DIODE MA4062-M(QZ)	
D563	8-719-034-46	DIODE MA4062-M(QZ)	
D564	8-719-404-46	DIODE MA110	
D571	8-719-034-46	DIODE MA4062-M(QZ)	
D572	8-719-034-49	DIODE MA4068-L(QZ)	
D573	8-719-034-46	DIODE MA4062-M(QZ)	
D574	8-719-034-46	DIODE MA4062-M(QZ)	
D602	8-719-022-90	DIODE MA8160-M	
D603	8-719-422-64	DIODE MA8062-M	
D605	8-719-404-46	DIODE MA110	
D651	8-719-034-66	DIODE MA4100-M(QZ)	
D652	8-719-034-46	DIODE MA4062-M(QZ)	
D653	8-719-034-46	DIODE MA4062-M(QZ)	
D654	8-719-034-46	DIODE MA4062-M(QZ)	
D655	8-719-034-46	DIODE MA4062-M(QZ)	
D656	8-719-034-46	DIODE MA4062-M(QZ)	
D657	8-719-034-46	DIODE MA4062-M(QZ)	
D751	8-719-050-86	DIODE 1SS133T-91S	
D781	8-719-034-46	DIODE MA4062-M(QZ)	
D782	8-719-034-98	DIODE MA4200-M(QZ)	
D783	8-719-049-38	DIODE 1N5404TU	
D999	8-719-050-86	DIODE 1SS133T-91S	
		< IC >	
IC11	8-759-823-81	IC LC7216M	
IC21	8-759-242-66	IC TC4W66F	
IC301	8-759-160-99	IC HA12174	
IC331	8-759-823-87	IC LB1638M	
IC351	8-752-071-19	IC CXA1946Q	
IC352	8-759-711-85	IC NJM4580E-D	
IC371	8-759-262-37	IC TA2050F(EL) (C620)	
IC381	8-759-262-37	IC TA2050F(EL) (C620)	

Ref. No.	Part No.	Description	Remark
IC501	8-759-339-48	IC uPD78058GC-043-3B9	
IC552	8-759-196-18	IC M62008FP-T1	
IC571	8-759-096-16	IC MM1175XFF	
IC601	8-759-182-75	IC BA3910B-V2	
IC781	8-759-260-77	IC HA13150A	
		< TRANSISTOR >	
Q1	8-729-421-22	TRANSISTOR UN2211 (E)	
Q3	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q4	8-729-421-22	TRANSISTOR UN2211 (E)	
Q21	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q22	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q81	8-729-424-70	TRANSISTOR UN2217	
Q171	8-729-920-21	TRANSISTOR DTC314TKH04	
Q181	8-729-920-21	TRANSISTOR DTC314TKH04	
Q271	8-729-920-21	TRANSISTOR DTC314TKH04	
Q281	8-729-920-21	TRANSISTOR DTC314TKH04	
Q331	8-729-015-11	TRANSISTOR 2SD1802FAST-TL	
Q332	8-729-424-08	TRANSISTOR UN2111	
Q334	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q501	8-729-421-22	TRANSISTOR UN2211	
Q502	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q503	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q505	8-729-421-22	TRANSISTOR UN2211	
Q541	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q542	8-729-424-08	TRANSISTOR UN2111	
Q543	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q551	8-729-424-08	TRANSISTOR UN2111	
Q552	8-729-424-08	TRANSISTOR UN2111	
Q603	8-729-421-22	TRANSISTOR UN2211	
Q604	8-729-424-18	TRANSISTOR UN2113 (C620)	
Q606	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q651	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q652	8-729-421-22	TRANSISTOR UN2211	
Q654	8-729-421-22	TRANSISTOR UN2211	
Q655	8-729-030-18	TRANSISTOR 2SD2525	
Q656	8-729-424-08	TRANSISTOR UN2111	

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
14	1-765-081-11	CORD (WITH CONNECTOR)	
15	1-769-448-21	CORD (WITH CONNECTOR) (AUDIO) (C620)	
15	1-769-449-11	CORD (WITH CONNECTOR) (AUDIO) (C610)	
130	1-765-460-12	CORD (WITH CONNECTOR)	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	
HP901	1-500-157-21	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN (CAPSTAN/REEL)	
M902	X-3368-685-1	MOTOR ASSY, SUB (LOADING/TAPE OPERATION)	
S901	1-692-885-11	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

****

ACCESSORIES & PACKING MATERIALS

****

	1-473-067-31	REMOTE COMMANDER (RM-X2S) (C620)
	1-575-616-41	CORD (WITH TERMINAL)
	3-798-365-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH) (C620)
	3-798-366-21	MANUAL, INSTRUCTION (ENGLISH) (C620)
	3-798-367-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (C610:US, Canadian)
	3-798-367-51	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE, ARABIC) (E)
	3-798-368-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (C610:US, Canadian)
	3-798-368-51	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH, CHINESE, ARABIC) (E)
	X-3369-665-1	CASE ASSY
	X-3369-817-1	BRACKET ASSY (C620)

****

****

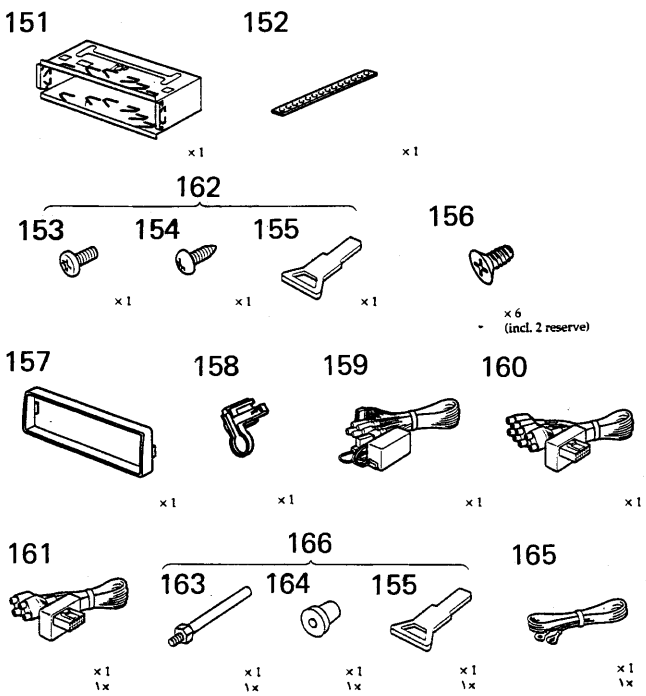
HARDWARE LIST

****

#1	7-621-770-67	SCREW +PTT 2.6X6 (S)
#2	7-621-773-87	SCREW +PTT 2.6X10 (S)
#3	7-624-104-04	STOP RING 2.0, TYPE -E
#4	7-627-533-17	PRECISION SCREW +P 2X2 TYPE 3
#5	7-628-253-05	SCREW +PS 2X4
#6	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT
#7	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT
#8	7-621-772-10	SCREW +B 2X4

****

Ref. No.	Part No.	Description	Remark
		MOUNTING HARDWARE	
		**********	
* 151	3-916-161-01	FRAME, FITTING	
152	NOT SUPPLIED		
153	7-682-560-04	SCREW +P 4X6 (US, Canadian)	
154	3-915-917-01	SCREW (4X12), +T (US, Canadian)	
155	3-388-078-01	KEY	
156	X-3369-934-1	SCREW ASSY (J), FITTING	
157	3-920-584-01	COLLAR	
158	3-923-046-01	STOPPER (C620)	
159	1-765-081-11	CORD (WITH CONNECTOR)	
160	1-769-448-21	CORD (WITH CONNECTOR) (AUDIO) (C620)	
161	1-769-449-11	CORD (WITH CONNECTOR) (AUDIO) (C610)	
162	X-3370-076-1	SCREW ASSY (KEY), FITTING (US, Canadian)	
163	3-386-828-01	SCREW, FITTING (E)	
164	3-349-410-01	BUSHING (E)	
165	1-575-616-41	CORD (WITH TERMINAL)	
166	X-3370-077-1	SCREW ASSY (KEY), FITTING (E)	



Sony Corporation
Mobile Electronics Company

English
95B047043-1
Printed in Singapore
© 1995. 2
Published by Home A & V Products Div.
Quality Engineering Dept.

XR-C610/C620

SONY®
SERVICE MANUAL

US Model
XR-C610/C620
Canadian Model
E Model
XR-C610

SUPPLEMENT-1

File this supplement with the service manual.

Subject : Add the Electrical Parts List
Change the Main Board and Schematic Diagram

CONTROL

1. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

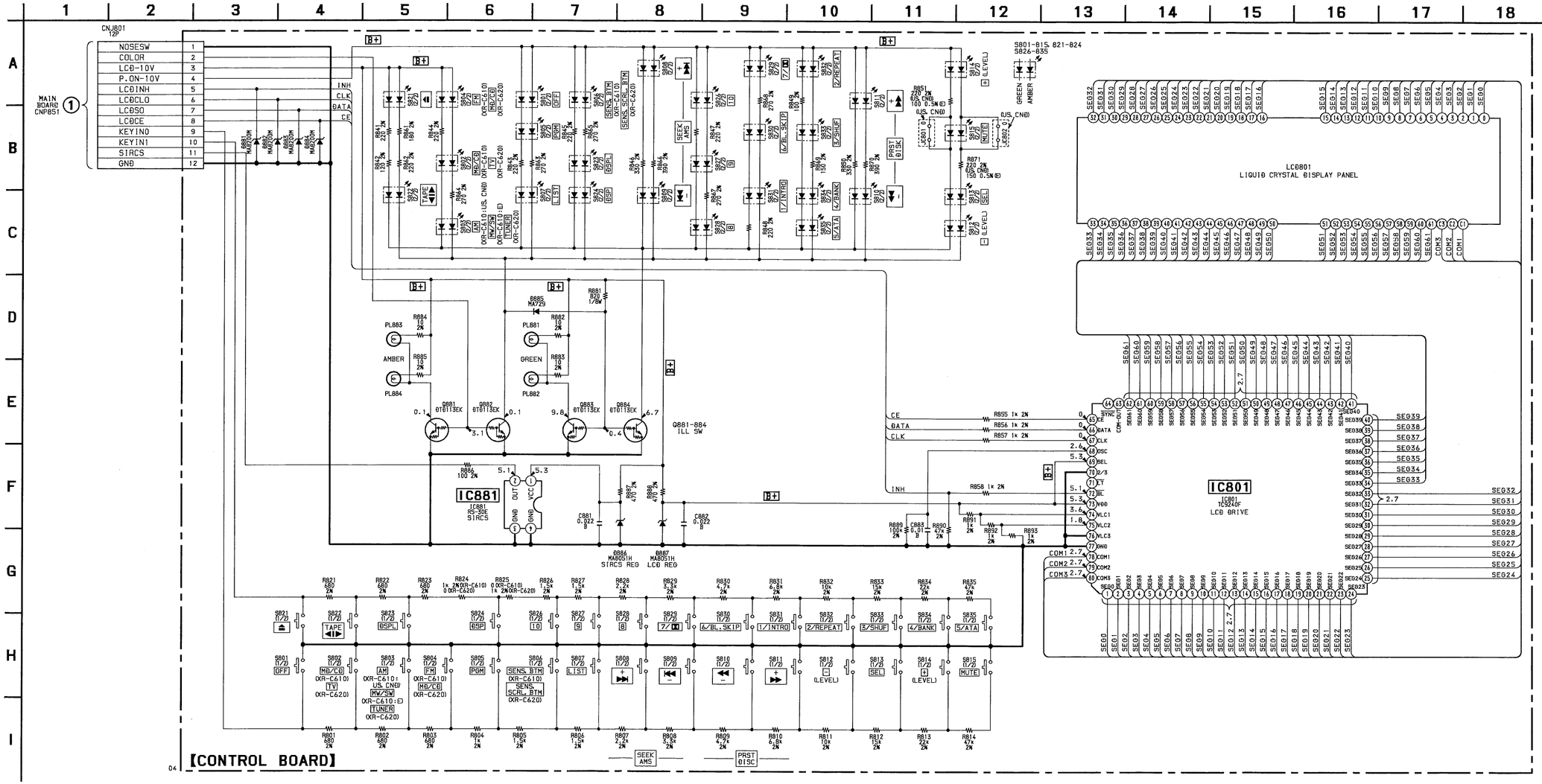
When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		CONTROL BOARD			
		**********			
*	3-920-601-01	HOLDER (LCD)			
*	3-920-602-01	SHEET (REFLECTOR)			
*	3-920-610-01	PLATE (LCD), LIGHT GUIDE			
		< CAPACITOR >			
C881	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	
C882	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	
C883	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
		< CONNECTOR >			
CNJ801	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D881	8-719-017-98	DIODE	MA8200-TX		
D882	8-719-017-98	DIODE	MA8200-TX		
D883	8-719-017-98	DIODE	MA8200-TX		
D884	8-719-017-98	DIODE	MA8200-TX		
D885	8-719-420-51	DIODE	MA729		
D886	8-719-422-43	DIODE	MA8051-H		
D887	8-719-422-43	DIODE	MA8051-H		
		< IC >			
IC801	8-759-246-16	IC	TC9240F		
IC881	8-749-925-07	IC	RS-30E-T		
		< JUMPER RESISTOR >			
JC801	1-216-295-00	CONDUCTOR, CHIP	(2012)		(US, Canadian)
JC802	1-216-295-00	CONDUCTOR, CHIP	(2012)		(US, Canadian)
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-810-775-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< PILOT LAMP >			
PL881	1-517-181-11	LAMP, PILOT			
PL882	1-517-181-11	LAMP, PILOT			
PL883	1-517-181-21	LAMP, PILOT			
PL884	1-517-181-21	LAMP, PILOT			
		< TRANSISTOR >			
Q881	8-729-904-66	TRANSISTOR	DTD113EK		
Q882	8-729-904-66	TRANSISTOR	DTD113EK		
Q883	8-729-904-66	TRANSISTOR	DTD113EK		
Q884	8-729-904-66	TRANSISTOR	DTD113EK		
		< RESISTOR >			
R801-803					
	1-216-647-11	METAL CHIP	680	0.5% 1/10W	
R804	1-216-651-11	METAL CHIP	1K	0.5% 1/10W	
R805	1-216-655-11	METAL CHIP	1.5K	0.5% 1/10W	
R806	1-216-655-11	METAL CHIP	1.5K	0.5% 1/10W	
R807	1-216-659-11	METAL CHIP	2.2K	0.5% 1/10W	
R808	1-216-663-11	METAL CHIP	3.3K	0.5% 1/10W	
R809	1-216-667-11	METAL CHIP	4.7K	0.5% 1/10W	
R810	1-216-671-11	METAL CHIP	6.8K	0.5% 1/10W	
R811	1-208-806-11	METAL GLAZE	10K	2% 1/10W	
R812	1-208-810-11	METAL GLAZE	15K	2% 1/10W	
R813	1-208-814-11	METAL GLAZE	22K	2% 1/10W	
R814	1-208-822-11	METAL GLAZE	47K	2% 1/10W	
R821-823					
	1-216-647-11	METAL CHIP	680	0.5% 1/10W	
R824	1-216-651-11	METAL CHIP	1K	0.5% 1/10W	(C610)
R824	1-216-295-00	CONDUCTOR, CHIP	(2012)		(C620)
R825	1-216-295-00	CONDUCTOR, CHIP	(2012)		(C610)
R825	1-216-651-11	METAL CHIP	1K	0.5% 1/10W	(C620)
R826	1-216-655-11	METAL CHIP	1.5K	0.5% 1/10W	
R827	1-216-655-11	METAL CHIP	1.5K	0.5% 1/10W	
R828	1-216-659-11	METAL CHIP	2.2K	0.5% 1/10W	
R829	1-216-663-11	METAL CHIP	3.3K	0.5% 1/10W	
R830	1-216-667-11	METAL CHIP	4.7K	0.5% 1/10W	
R831	1-216-671-11	METAL CHIP	6.8K	0.5% 1/10W	
R832	1-208-806-11	METAL GLAZE	10K	2% 1/10W	
R833	1-208-810-11	METAL GLAZE	15K	2% 1/10W	
R834	1-208-814-11	METAL GLAZE	22K	2% 1/10W	
R835	1-208-822-11	METAL GLAZE	47K	2% 1/10W	

Ref. No.	Part No.	Description			Remark
R841	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R842	1-208-760-11	METAL GLAZE	120	2%	1/10W
R843-845					
	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R846	1-208-770-11	METAL GLAZE	330	2%	1/10W
R847	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R848	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R849	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R850	1-208-770-11	METAL GLAZE	330	2%	1/10W
R851	1-216-635-11	METAL CHIP	220	0.5%	1/10W (US, Canadian)
R851	1-216-627-11	METAL CHIP	100	0.5%	1/10W (E)
R855-858					
	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R861	1-208-764-11	METAL GLAZE	180	2%	1/10W
R862	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R863-865					
	1-208-768-11	METAL GLAZE	270	2%	1/10W
R866	1-208-772-11	METAL GLAZE	390	2%	1/10W
R867	1-208-768-11	METAL GLAZE	270	2%	1/10W
R868	1-208-768-11	METAL GLAZE	270	2%	1/10W
R869	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R870	1-208-772-11	METAL GLAZE	390	2%	1/10W
R871	1-208-768-11	METAL GLAZE	270	2%	1/10W (US, Canadian)
R871	1-216-631-11	METAL CHIP	150	0.5%	1/10W (E)
R881	1-216-196-00	METAL GLAZE	820	5%	1/8W
R882-885					
	1-211-952-11	METAL GLAZE	10	2%	1/10W
R886	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R887	1-208-774-11	METAL GLAZE	470	2%	1/10W
R888	1-208-774-11	METAL GLAZE	470	2%	1/10W
R889	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R890	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R891-893					
	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
		< SWITCH >			
S801	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (OFF)			
S802	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (MD/CD (C610)) (TV (C620))			
S803	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (AM (C610:US, Canadian)) (MW/SW (E)) (TUNER (C620))			
S804	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (FM (C610)) (MD/CD (C620))			
S805	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (PGM)			
S806	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (SENS, BTM (C610)) (SENS. SCRL, BTM (C620))			
S807	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (LIST)			
S808	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (+ ⏭ (SEEK AMS))			
S809	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (- ⏮ (SEEK AMS))			
S810	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (- ◀◀ (PRST DISC))			
S811	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (+ ▶▶ (PRST DISC))			
S812	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (- (LEVEL))			
S813	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (SEL)			
S814	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (+ (LEVEL))			
S815	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (MUTE)			
S821	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (⏏)			
S822	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (TAPE ◀❚▶)			
S823	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (DSPL)			
S824	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (DSP)			
S826	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (10)			
S827	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (9)			
S828	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (8)			
S829	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (7/□□)			
S830	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (6/BL. SKIP)			
S831	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (1/INTRO)			
S832	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (2/REPEAT)			
S833	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (3/SHUF)			
S834	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (4/BANK)			
S835	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (5/ATA)			
**********					
*	A-3298-532-A	MAIN BOARD, COMPLETE (C620)			
*	A-3298-534-A	MAIN BOARD, COMPLETE (C610:US, Canadian)			
*	A-3298-535-A	MAIN BOARD, COMPLETE (E)			
		**********			
*	3-920-605-01	HEAT SINK (IC)			
		< BUZZER >			
BZ601	1-504-468-21	SOUNDER, PIEZOELECTRIC			
		< CAPACITOR >			
C1	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C2	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C3	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C4	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C6	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C7-9					
	1-126-933-11	ELECT	100uF	20%	10V
C10	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C11	1-124-234-00	ELECT	22uF	20%	16V (E)
C12	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C13	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V

—continued on page 15—

2. SCHEMATIC DIAGRAM—PANEL SECTION—



Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC termianls.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  CND : Canadian model

3. PRINTED WIRING BOARDS—MAIN SECTION—

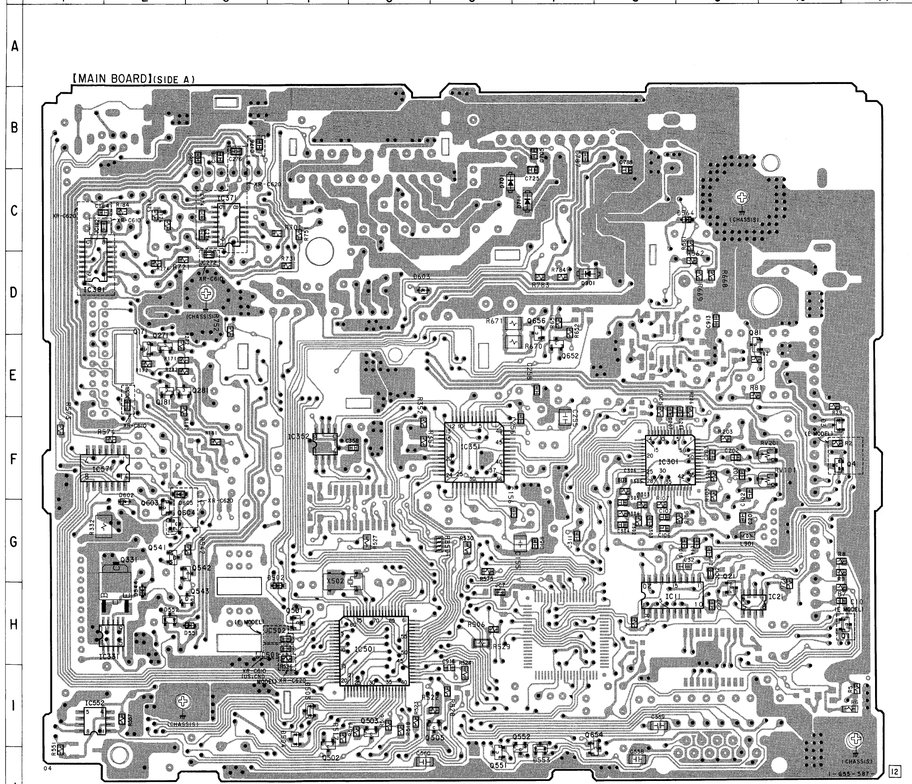
● Semiconductor Location

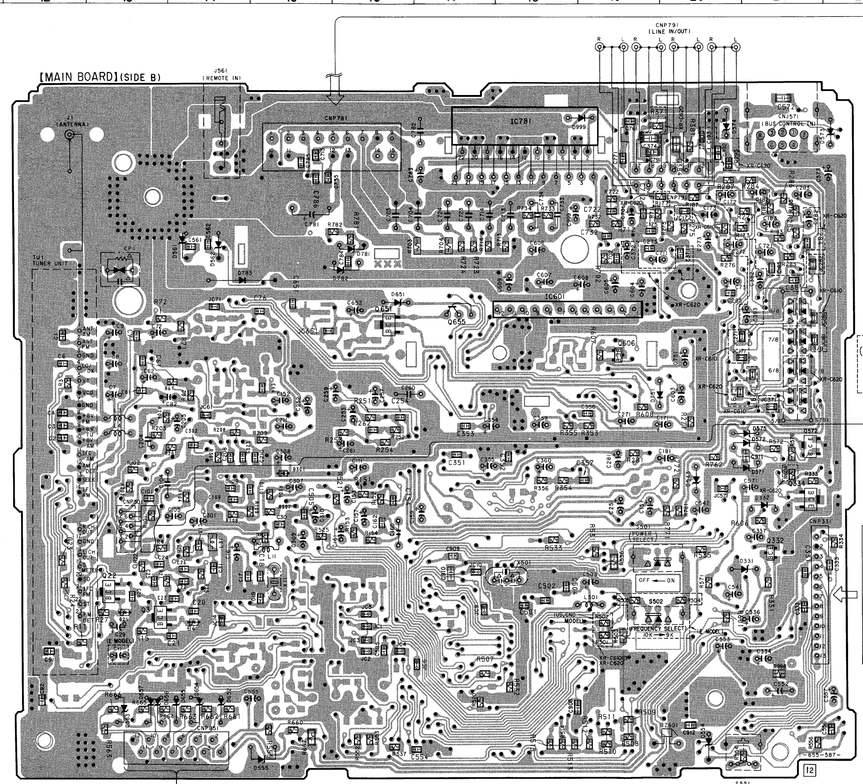
Ref. No.	Location	Ref. No.	Location
D3	F-10	IC21	H-9
D4	H-14	IC301	F-8
D21	H-13	IC331	H-2
D301	F-15	IC351	F-6
D331	G-20	IC352	F-4
D332	G-21	(IC371)	C-3
D502	G-4	(IC381)	D-1
D503	I-4	IC501	H-5
D504	I-4	IC552	I-1
D543	F-20	IC571	F-1
D544	H-2	IC601	D-18
D551	H-3	IC781	B-18
D552	H-2		
D553	J-7	<Q1>	H-10
D554	I-20	Q3	H-13
D555	J-15	<Q4>	F-10
D561	C-14	Q21	G-9
D562	C-14	Q22	H-13
D563	I-13	Q81	D-9
D564	C-9	Q171	E-2
D571	F-20	Q181	E-2
D572	F-20	Q271	E-2
D573	B-21	Q281	E-2
D574	B-20	Q331	G-2
D602	F-2	Q332	G-21
D603	D-5	Q334	F-21
D605	F-2	Q501	H-4
D651	D-16	Q502	I-4
D652	I-14	Q503	I-5
D654	I-14	Q505	I-5
D655	I-14	Q541	G-2
D656	I-13	Q542	G-3
D657	I-13	Q543	H-2
D701	C-6	Q551	J-6
D711	C-7	Q552	I-7
D751	E-19	Q603	G-2
D781	D-16	(Q604)	G-2
D782	D-16	Q606	E-19
D783	D-14	Q651	D-16
D901	D-7	Q652	E-7
D999	B-19	Q654	I-7
		Q655	D-17
IC11	H-8	Q656	D-7

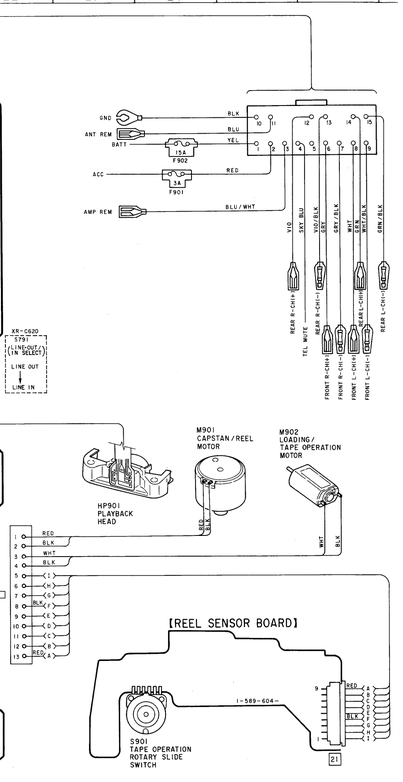
( ): XR-C620 only
< >: E model only

Note :

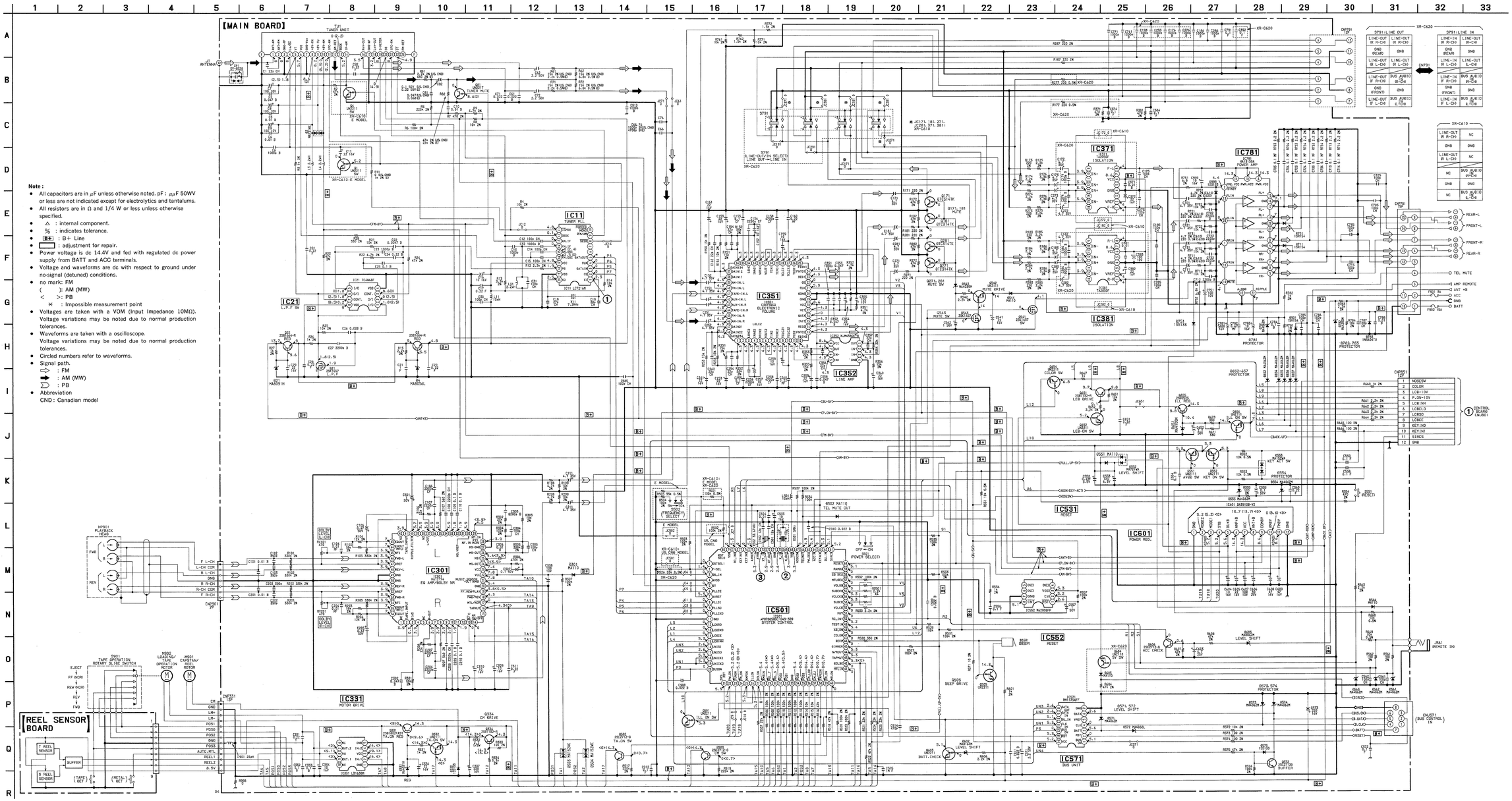
- ○— : parts extracted from the component side.
- ● : Through hole.
- ▬ : Pattern on the side which is seen. (The other layer's patterns are not indicated.)
- Abbreviation
  CND : Canadian model







4. SCHEMATIC DIAGRAM—MAIN SECTION—


【MAIN BOARD】
【REEL SENSOR BOARD】
IC11 TUNER PULL
IC21 L.P.F SW
IC301 EQ AMP/DOLBY NR
IC331 MOTOR DRIVE
IC351 ELECTRONIC VOLUME
IC352 LINE AMP
IC371 ISOLATION
IC381 ISOLATION
IC501 SYSTEM CONTROL
IC531 RESET
IC552 RESET
IC571 BUS UNIT
IC601 POWER REG.
IC781 POWER AMP
Q354 CM DRIVE
Q501 BEEP DRIVE
Q502 MUTE
Q571, 572 LEVEL SHIFT
Q601 LEVEL SHIFT
Q602 LEVEL SHIFT
Q603 BATT.CHECK
Q781 MUTE DRIVE
Q782 MUTE SW
Q783 MUTE SW
Q784 MUTE SW
Q785 MUTE SW
Q786 MUTE SW
Q787 MUTE SW
Q788 MUTE SW
Q789 MUTE SW
Q790 MUTE SW
Q791 MUTE SW
Q792 MUTE SW
Q793 MUTE SW
Q794 MUTE SW
Q795 MUTE SW
Q796 MUTE SW
Q797 MUTE SW
Q798 MUTE SW
Q799 MUTE SW
Q7A0 MUTE SW
Q7A1 MUTE SW
Q7A2 MUTE SW
Q7A3 MUTE SW
Q7A4 MUTE SW
Q7A5 MUTE SW
Q7A6 MUTE SW
Q7A7 MUTE SW
Q7A8 MUTE SW
Q7A9 MUTE SW
Q7AA MUTE SW
Q7AB MUTE SW
Q7AC MUTE SW
Q7AD MUTE SW
Q7AE MUTE SW
Q7AF MUTE SW
Q7AG MUTE SW
Q7AH MUTE SW
Q7AI MUTE SW
Q7AJ MUTE SW
Q7AK MUTE SW
Q7AL MUTE SW
Q7AM MUTE SW
Q7AN MUTE SW
Q7AO MUTE SW
Q7AP MUTE SW
Q7AQ MUTE SW
Q7AR MUTE SW
Q7AS MUTE SW
Q7AT MUTE SW
Q7AU MUTE SW
Q7AV MUTE SW
Q7AW MUTE SW
Q7AX MUTE SW
Q7AY MUTE SW
Q7AZ MUTE SW
Q7B0 MUTE SW
Q7B1 MUTE SW
Q7B2 MUTE SW
Q7B3 MUTE SW
Q7B4 MUTE SW
Q7B5 MUTE SW
Q7B6 MUTE SW
Q7B7 MUTE SW
Q7B8 MUTE SW
Q7B9 MUTE SW
Q7BA MUTE SW
Q7BB MUTE SW
Q7BC MUTE SW
Q7BD MUTE SW
Q7BE MUTE SW
Q7BF MUTE SW
Q7BG MUTE SW
Q7BH MUTE SW
Q7BI MUTE SW
Q7BJ MUTE SW
Q7BK MUTE SW
Q7BL MUTE SW
Q7BM MUTE SW
Q7BN MUTE SW
Q7BO MUTE SW
Q7BP MUTE SW
Q7BQ MUTE SW
Q7BR MUTE SW
Q7BS MUTE SW
Q7BT MUTE SW
Q7BU MUTE SW
Q7BV MUTE SW
Q7BW MUTE SW
Q7BX MUTE SW
Q7BY MUTE SW
Q7BZ MUTE SW
Q7C0 MUTE SW
Q7C1 MUTE SW
Q7C2 MUTE SW
Q7C3 MUTE SW
Q7C4 MUTE SW
Q7C5 MUTE SW
Q7C6 MUTE SW
Q7C7 MUTE SW
Q7C8 MUTE SW
Q7C9 MUTE SW
Q7CA MUTE SW
Q7CB MUTE SW
Q7CC MUTE SW
Q7CD MUTE SW
Q7CE MUTE SW
Q7CF MUTE SW
Q7CG MUTE SW
Q7CH MUTE SW
Q7CI MUTE SW
Q7CJ MUTE SW
Q7CK MUTE SW
Q7CL MUTE SW
Q7CM MUTE SW
Q7CN MUTE SW
Q7CO MUTE SW
Q7CP MUTE SW
Q7CQ MUTE SW
Q7CR MUTE SW
Q7CS MUTE SW
Q7CT MUTE SW
Q7CU MUTE SW
Q7CV MUTE SW
Q7CW MUTE SW
Q7CX MUTE SW
Q7CY MUTE SW
Q7CZ MUTE SW
Q7D0 MUTE SW
Q7D1 MUTE SW
Q7D2 MUTE SW
Q7D3 MUTE SW
Q7D4 MUTE SW
Q7D5 MUTE SW
Q7D6 MUTE SW
Q7D7 MUTE SW
Q7D8 MUTE SW
Q7D9 MUTE SW
Q7DA MUTE SW
Q7DB MUTE SW
Q7DC MUTE SW
Q7DD MUTE SW
Q7DE MUTE SW
Q7DF MUTE SW
Q7DG MUTE SW
Q7DH MUTE SW
Q7DI MUTE SW
Q7DJ MUTE SW
Q7DK MUTE SW
Q7DL MUTE SW
Q7DM MUTE SW
Q7DN MUTE SW
Q7DO MUTE SW
Q7DP MUTE SW
Q7DQ MUTE SW
Q7DR MUTE SW
Q7DS MUTE SW
Q7DT MUTE SW
Q7DU MUTE SW
Q7DV MUTE SW
Q7DW MUTE SW
Q7DX MUTE SW
Q7DY MUTE SW
Q7DZ MUTE SW
Q7E0 MUTE SW
Q7E1 MUTE SW
Q7E2 MUTE SW
Q7E3 MUTE SW
Q7E4 MUTE SW
Q7E5 MUTE SW
Q7E6 MUTE SW
Q7E7 MUTE SW
Q7E8 MUTE SW
Q7E9 MUTE SW
Q7EA MUTE SW
Q7EB MUTE SW
Q7EC MUTE SW
Q7ED MUTE SW
Q7EE MUTE SW
Q7EF MUTE SW
Q7EG MUTE SW
Q7EH MUTE SW
Q7EI MUTE SW
Q7EJ MUTE SW
Q7EK MUTE SW
Q7EL MUTE SW
Q7EM MUTE SW
Q7EN MUTE SW
Q7EO MUTE SW
Q7EP MUTE SW
Q7EQ MUTE SW
Q7ER MUTE SW
Q7ES MUTE SW
Q7ET MUTE SW
Q7EU MUTE SW
Q7EV MUTE SW
Q7EW MUTE SW
Q7EX MUTE SW
Q7EY MUTE SW
Q7EZ MUTE SW
Q7F0 MUTE SW
Q7F1 MUTE SW
Q7F2 MUTE SW
Q7F3 MUTE SW
Q7F4 MUTE SW
Q7F5 MUTE SW
Q7F6 MUTE SW
Q7F7 MUTE SW
Q7F8 MUTE SW
Q7F9 MUTE SW
Q7FA MUTE SW
Q7FB MUTE SW
Q7FC MUTE SW
Q7FD MUTE SW
Q7FE MUTE SW
Q7FF MUTE SW
Q7FG MUTE SW
Q7FH MUTE SW
Q7FI MUTE SW
Q7FJ MUTE SW
Q7FK MUTE SW
Q7FL MUTE SW
Q7FM MUTE SW
Q7FN MUTE SW
Q7FO MUTE SW
Q7FP MUTE SW
Q7FQ MUTE SW
Q7FR MUTE SW
Q7FS MUTE SW
Q7FT MUTE SW
Q7FU MUTE SW
Q7FV MUTE SW
Q7FW MUTE SW
Q7FX MUTE SW
Q7FY MUTE SW
Q7FZ MUTE SW
Q7G0 MUTE SW
Q7G1 MUTE SW
Q7G2 MUTE SW
Q7G3 MUTE SW
Q7G4 MUTE SW
Q7G5 MUTE SW
Q7G6 MUTE SW
Q7G7 MUTE SW
Q7G8 MUTE SW
Q7G9 MUTE SW
Q7GA MUTE SW
Q7GB MUTE SW
Q7GC MUTE SW
Q7GD MUTE SW
Q7GE MUTE SW
Q7GF MUTE SW
Q7GG MUTE SW
Q7GH MUTE SW
Q7GI MUTE SW
Q7GJ MUTE SW
Q7GK MUTE SW
Q7GL MUTE SW
Q7GM MUTE SW
Q7GN MUTE SW
Q7GO MUTE SW
Q7GP MUTE SW
Q7GQ MUTE SW
Q7GR MUTE SW
Q7GS MUTE SW
Q7GT MUTE SW
Q7GU MUTE SW
Q7GV MUTE SW
Q7GW MUTE SW
Q7GX MUTE SW
Q7GY MUTE SW
Q7GZ MUTE SW
Q7H0 MUTE SW
Q7H1 MUTE SW
Q7H2 MUTE SW
Q7H3 MUTE SW
Q7H4 MUTE SW
Q7H5 MUTE SW
Q7H6 MUTE SW
Q7H7 MUTE SW
Q7H8 MUTE SW
Q7H9 MUTE SW
Q7HA MUTE SW
Q7HB MUTE SW
Q7HC MUTE SW
Q7HD MUTE SW
Q7HE MUTE SW
Q7HF MUTE SW
Q7HG MUTE SW
Q7HH MUTE SW
Q7HI MUTE SW
Q7HJ MUTE SW
Q7HK MUTE SW
Q7HL MUTE SW
Q7HM MUTE SW
Q7HN MUTE SW
Q7HO MUTE SW
Q7HP MUTE SW
Q7HQ MUTE SW
Q7HR MUTE SW
Q7HS MUTE SW
Q7HT MUTE SW
Q7HU MUTE SW
Q7HV MUTE SW
Q7HW MUTE SW
Q7HX MUTE SW
Q7HY MUTE SW
Q7HZ MUTE SW
Q7I0 MUTE SW
Q7I1 MUTE SW
Q7I2 MUTE SW
Q7I3 MUTE SW
Q7I4 MUTE SW
Q7I5 MUTE SW
Q7I6 MUTE SW
Q7I7 MUTE SW
Q7I8 MUTE SW
Q7I9 MUTE SW
Q7IA MUTE SW
Q7IB MUTE SW
Q7IC MUTE SW
Q7ID MUTE SW
Q7IE MUTE SW
Q7IF MUTE SW
Q7IG MUTE SW
Q7IH MUTE SW
Q7II MUTE SW
Q7IJ MUTE SW
Q7IK MUTE SW
Q7IL MUTE SW
Q7IM MUTE SW
Q7IN MUTE SW
Q7IO MUTE SW
Q7IP MUTE SW
Q7IQ MUTE SW
Q7IR MUTE SW
Q7IS MUTE SW
Q7IT MUTE SW
Q7IU MUTE SW
Q7IV MUTE SW
Q7IW MUTE SW
Q7IX MUTE SW
Q7IY MUTE SW
Q7IZ MUTE SW
Q7J0 MUTE SW
Q7J1 MUTE SW
Q7J2 MUTE SW
Q7J3 MUTE SW
Q7J4 MUTE SW
Q7J5 MUTE SW
Q7J6 MUTE SW
Q7J7 MUTE SW
Q7J8 MUTE SW
Q7J9 MUTE SW
Q7JA MUTE SW
Q7JB MUTE SW
Q7JC MUTE SW
Q7JD MUTE SW
Q7JE MUTE SW
Q7JF MUTE SW
Q7JG MUTE SW
Q7JH MUTE SW
Q7JI MUTE SW
Q7JJ MUTE SW
Q7JK MUTE SW
Q7JL MUTE SW
Q7JM MUTE SW
Q7JN MUTE SW
Q7JO MUTE SW
Q7JP MUTE SW
Q7JQ MUTE SW
Q7JR MUTE SW
Q7JS MUTE SW
Q7JT MUTE SW
Q7JU MUTE SW
Q7JV MUTE SW
Q7JW MUTE SW
Q7JX MUTE SW
Q7JY MUTE SW
Q7JZ MUTE SW
Q7K0 MUTE SW
Q7K1 MUTE SW
Q7K2 MUTE SW
Q7K3 MUTE SW
Q7K4 MUTE SW
Q7K5 MUTE SW
Q7K6 MUTE SW
Q7K7 MUTE SW
Q7K8 MUTE SW
Q7K9 MUTE SW
Q7KA MUTE SW
Q7KB MUTE SW
Q7KC MUTE SW
Q7KD MUTE SW
Q7KE MUTE SW
Q7KF MUTE SW
Q7KG MUTE SW
Q7KH MUTE SW
Q7KI MUTE SW
Q7KJ MUTE SW
Q7KK MUTE SW
Q7KL MUTE SW
Q7KM MUTE SW
Q7KN MUTE SW
Q7KO MUTE SW
Q7KP MUTE SW
Q7KQ MUTE SW
Q7KR MUTE SW
Q7KS MUTE SW
Q7KT MUTE SW
Q7KU MUTE SW
Q7KV MUTE SW
Q7KW MUTE SW
Q7KX MUTE SW
Q7KY MUTE SW
Q7KZ MUTE SW
Q7L0 MUTE SW
Q7L1 MUTE SW
Q7L2 MUTE SW
Q7L3 MUTE SW
Q7L4 MUTE SW
Q7L5 MUTE SW
Q7L6 MUTE SW
Q7L7 MUTE SW
Q7L8 MUTE SW
Q7L9 MUTE SW
Q7LA MUTE SW
Q7LB MUTE SW
Q7LC MUTE SW
Q7LD MUTE SW
Q7LE MUTE SW
Q7LF MUTE SW
Q7LG MUTE SW
Q7LH MUTE SW
Q7LI MUTE SW
Q7LJ MUTE SW
Q7LK MUTE SW
Q7LL MUTE SW
Q7LM MUTE SW
Q7LN MUTE SW
Q7LO MUTE SW
Q7LP MUTE SW
Q7LQ MUTE SW
Q7LR MUTE SW
Q7LS MUTE SW
Q7LT MUTE SW
Q7LU MUTE SW
Q7LV MUTE SW
Q7LW MUTE SW
Q7LX MUTE SW
Q7LY MUTE SW
Q7LZ MUTE SW
Q7M0 MUTE SW
Q7M1 MUTE SW
Q7M2 MUTE SW
Q7M3 MUTE SW
Q7M4 MUTE SW
Q7M5 MUTE SW
Q7M6 MUTE SW
Q7M7 MUTE SW
Q7M8 MUTE SW
Q7M9 MUTE SW
Q7MA MUTE SW
Q7MB MUTE SW
Q7MC MUTE SW
Q7MD MUTE SW
Q7ME MUTE SW
Q7MF MUTE SW
Q7MG MUTE SW
Q7MH MUTE SW
Q7MI MUTE SW
Q7MJ MUTE SW
Q7MK MUTE SW
Q7ML MUTE SW
Q7MM MUTE SW
Q7MN MUTE SW
Q7MO MUTE SW
Q7MP MUTE SW
Q7MQ MUTE SW
Q7MR MUTE SW
Q7MS MUTE SW
Q7MT MUTE SW
Q7MU MUTE SW
Q7MV MUTE SW
Q7MW MUTE SW
Q7MX MUTE SW
Q7MY MUTE SW
Q7MZ MUTE SW
Q7N0 MUTE SW
Q7N1 MUTE SW
Q7N2 MUTE SW
Q7N3 MUTE SW
Q7N4 MUTE SW
Q7N5 MUTE SW
Q7N6 MUTE SW
Q7N7 MUTE SW
Q7N8 MUTE SW
Q7N9 MUTE SW
Q7NA MUTE SW
Q7NB MUTE SW
Q7NC MUTE SW
Q7ND MUTE SW
Q7NE MUTE SW
Q7NF MUTE SW
Q7NG MUTE SW
Q7NH MUTE SW
Q7NI MUTE SW
Q7NJ MUTE SW
Q7NK MUTE SW
Q7NL MUTE SW
Q7NM MUTE SW
Q7NN MUTE SW
Q7NO MUTE SW
Q7NP MUTE SW
Q7NQ MUTE SW
Q7NR MUTE SW
Q7NS MUTE SW
Q7NT MUTE SW
Q7NU MUTE SW
Q7NV MUTE SW
Q7NW MUTE SW
Q7NX MUTE SW
Q7NY MUTE SW
Q7NZ MUTE SW
Q7O0 MUTE SW
Q7O1 MUTE SW
Q7O2 MUTE SW
Q7O3 MUTE SW
Q7O4 MUTE SW
Q7O5 MUTE SW
Q7O6 MUTE SW
Q7O7 MUTE SW
Q7O8 MUTE SW
Q7O9 MUTE SW
Q7OA MUTE SW
Q7OB MUTE SW
Q7OC MUTE SW
Q7OD MUTE SW
Q7OE MUTE SW
Q7OF MUTE SW
Q7OG MUTE SW
Q7OH MUTE SW
Q7OI MUTE SW
Q7OJ MUTE SW
Q7OK MUTE SW
Q7OL MUTE SW
Q7OM MUTE SW
Q7ON MUTE SW
Q7OO MUTE SW
Q7OP MUTE SW
Q7OQ MUTE SW
Q7OR MUTE SW
Q7OS MUTE SW
Q7OT MUTE SW
Q7OU MUTE SW
Q7OV MUTE SW
Q7OW MUTE SW
Q7OX MUTE SW
Q7OY MUTE SW
Q7OZ MUTE SW
Q7P0 MUTE SW
Q7P1 MUTE SW
Q7P2 MUTE SW
Q7P3 MUTE SW
Q7P4 MUTE SW
Q7P5 MUTE SW
Q7P6 MUTE SW
Q7P7 MUTE SW
Q7P8 MUTE SW
Q7P9 MUTE SW
Q7PA MUTE SW
Q7PB MUTE SW
Q7PC MUTE SW
Q7PD MUTE SW
Q7PE MUTE SW
Q7PF MUTE SW
Q7PG MUTE SW
Q7PH MUTE SW
Q7PI MUTE SW
Q7PJ MUTE SW
Q7PK MUTE SW
Q7PL MUTE SW
Q7PM MUTE SW
Q7PN MUTE SW
Q7PO MUTE SW
Q7PP MUTE SW
Q7PQ MUTE SW
Q7PR MUTE SW
Q7PS MUTE SW
Q7PT MUTE SW
Q7PU MUTE SW
Q7PV MUTE SW
Q7PW MUTE SW
Q7PX MUTE SW
Q7PY MUTE SW
Q7PZ MUTE SW
Q7Q0 MUTE SW
Q7Q1 MUTE SW
Q7Q2 MUTE SW
Q7Q3 MUTE SW
Q7Q4 MUTE SW
Q7Q5 MUTE SW
Q7Q6 MUTE SW
Q7Q7 MUTE SW
Q7Q8 MUTE SW
Q7Q9 MUTE SW
Q7QA MUTE SW
Q7QB MUTE SW
Q7QC MUTE SW
Q7QD MUTE SW
Q7QE MUTE SW
Q7QF MUTE SW
Q7QG MUTE SW
Q7QH MUTE SW
Q7QI MUTE SW
Q7QJ MUTE SW
Q7QK MUTE SW
Q7QL MUTE SW
Q7QM MUTE SW
Q7QN MUTE SW
Q7QO MUTE SW
Q7QP MUTE SW
Q7QQ MUTE SW
Q7QR MUTE SW
Q7QS MUTE SW
Q7QT MUTE SW
Q7QU MUTE SW
Q7QV MUTE SW
Q7QW MUTE SW
Q7QX MUTE SW
Q7QY MUTE SW
Q7QZ MUTE SW
Q7R0 MUTE SW
Q7R1 MUTE SW
Q7R2 MUTE SW
Q7R3 MUTE SW
Q7R4 MUTE SW
Q7R5 MUTE SW
Q7R6 MUTE SW
Q7R7 MUTE SW
Q7R8 MUTE SW
Q7R9 MUTE SW
Q7RA MUTE SW
Q7RB MUTE SW
Q7RC MUTE SW
Q7RD MUTE SW
Q7RE MUTE SW
Q7RF MUTE SW
Q7RG MUTE SW
Q7RH MUTE SW
Q7RI MUTE SW
Q7RJ MUTE SW
Q7RK MUTE SW
Q7RL MUTE SW
Q7RM MUTE SW
Q7RN MUTE SW
Q7RO MUTE SW
Q7RP MUTE SW
Q7RQ MUTE SW
Q7RR MUTE SW
Q7RS MUTE SW
Q7RT MUTE SW
Q7RU MUTE SW
Q7RV MUTE SW
Q7RW MUTE SW
Q7RX MUTE SW
Q7RY MUTE SW
Q7RZ MUTE SW
Q7S0 MUTE SW
Q7S1 MUTE SW
Q7S2 MUTE SW
Q7S3 MUTE SW
Q7S4 MUTE SW
Q7S5 MUTE SW
Q7S6 MUTE SW
Q7S7 MUTE SW
Q7S8 MUTE SW
Q7S9 MUTE SW
Q7SA MUTE SW
Q7SB MUTE SW
Q7SC MUTE SW
Q7SD MUTE SW
Q7SE MUTE SW
Q7SF MUTE SW
Q7SG MUTE SW
Q7SH MUTE SW
Q7SI MUTE SW
Q7SJ MUTE SW
Q7SK MUTE SW
Q7SL MUTE SW
Q7SM MUTE SW
Q7SN MUTE SW
Q7SO MUTE SW
Q7SP MUTE SW
Q7SQ MUTE SW
Q7SR MUTE SW
Q7SS MUTE SW
Q7ST MUTE SW
Q7SU MUTE SW
Q7SV MUTE SW
Q7SW MUTE SW
Q7SX MUTE SW
Q7SY MUTE SW
Q7SZ MUTE SW
Q7T0 MUTE SW
Q7T1 MUTE SW
Q7T2 MUTE SW
Q7T3 MUTE SW
Q7T4 MUTE SW
Q7T5 MUTE SW
Q7T6 MUTE SW
Q7T7 MUTE SW
Q7T8 MUTE SW
Q7T9 MUTE SW
Q7TA MUTE SW
Q7TB MUTE SW
Q7TC MUTE SW
Q7TD MUTE SW
Q7TE MUTE SW
Q7TF MUTE SW
Q7TG MUTE SW
Q7TH MUTE SW
Q7TI MUTE SW
Q7TJ MUTE SW
Q7TK MUTE SW
Q7TL MUTE SW
Q7TM MUTE SW
Q7TN MUTE SW
Q7TO MUTE SW
Q7TP MUTE SW
Q7TQ MUTE SW
Q7TR MUTE SW
Q7TS MUTE SW
Q7TT MUTE SW
Q7TU MUTE SW
Q7TV MUTE SW
Q7TW MUTE SW
Q7TX MUTE SW
Q7TY MUTE SW
Q7TZ MUTE SW
Q7U0 MUTE SW
Q7U1 MUTE SW
Q7U2 MUTE SW
Q7U3 MUTE SW
Q7U4 MUTE SW
Q7U5 MUTE SW
Q7U6 MUTE SW
Q7U7 MUTE SW
Q7U8 MUTE SW
Q7U9 MUTE SW
Q7UA MUTE SW
Q7UB MUTE SW
Q7UC MUTE SW
Q7UD MUTE SW
Q7UE MUTE SW
Q7UF MUTE SW
Q7UG MUTE SW
Q7UH MUTE SW
Q7UI MUTE SW
Q7UJ MUTE SW
Q7UK MUTE SW
Q7UL MUTE SW
Q7UM MUTE SW
Q7UN MUTE SW
Q7UO MUTE SW
Q7UP MUTE SW
Q7UQ MUTE SW
Q7UR MUTE SW
Q7US MUTE SW
Q7UT MUTE SW
Q7UU MUTE SW
Q7UV MUTE SW
Q7UW MUTE SW
Q7UX MUTE SW
Q7UY MUTE SW
Q7UZ MUTE SW
Q7V0 MUTE SW
Q7V1 MUTE SW
Q7V2 MUTE SW
Q7V3 MUTE SW
Q7V4 MUTE SW
Q7V5 MUTE SW
Q7V6 MUTE SW
Q7V7 MUTE SW
Q7V8 MUTE SW
Q7V9 MUTE SW
Q7VA MUTE SW
Q7VB MUTE SW
Q7VC MUTE SW
Q7VD MUTE SW
Q7VE MUTE SW
Q7VF MUTE SW
Q7VG MUTE SW
Q7VH MUTE SW
Q7VI MUTE SW
Q7VJ MUTE SW
Q7VK MUTE SW
Q7VL MUTE SW
Q7VM MUTE SW
Q7VN MUTE SW
Q7VO MUTE SW
Q7VP MUTE SW
Q7VQ MUTE SW
Q7VR MUTE SW
Q7VS MUTE SW
Q7VT MUTE SW
Q7VU MUTE SW
Q7VV MUTE SW
Q7VW MUTE SW
Q7VX MUTE SW
Q7VY MUTE SW
Q7VZ MUTE SW
Q7W0 MUTE SW
Q7W1 MUTE SW
Q7W2 MUTE SW
Q7W3 MUTE SW
Q7W4 MUTE SW
Q7W5 MUTE SW
Q7W6 MUTE SW
Q7W7 MUTE SW
Q7W8 MUTE SW
Q7W9 MUTE SW
Q7WA MUTE SW
Q7WB MUTE SW
Q7WC MUTE SW
Q7WD MUTE SW
Q7WE MUTE SW
Q7WF MUTE SW
Q7WG MUTE SW
Q7WH MUTE SW
Q7WI MUTE SW
Q7WJ MUTE SW
Q7WK MUTE SW
Q7WL MUTE SW
Q7WM MUTE SW
Q7WN MUTE SW
Q7WO MUTE SW
Q7WP MUTE SW
Q7WQ MUTE SW
Q7WR MUTE SW
Q7WS MUTE SW
Q7WT MUTE SW
Q7WU MUTE SW
Q7WV MUTE SW
Q7WW MUTE SW
Q7WX MUTE SW
Q7WY MUTE SW
Q7WZ MUTE SW
Q7X0 MUTE SW
Q7X1 MUTE SW
Q7X2 MUTE SW
Q7X3 MUTE SW
Q7X4 MUTE SW
Q7X5 MUTE SW
Q7X6 MUTE SW
Q7X7 MUTE SW
Q7X8 MUTE SW
Q7X9 MUTE SW
Q7XA MUTE SW
Q7XB MUTE SW
Q7XC MUTE SW
Q7XD MUTE SW
Q7XE MUTE SW
Q7XF MUTE SW
Q7XG MUTE SW
Q7XH MUTE SW
Q7XI MUTE SW
Q7XJ MUTE SW
Q7XK MUTE SW
Q7XL MUTE SW
Q7XM MUTE SW
Q7XN MUTE SW
Q7XO MUTE SW
Q7XP MUTE SW
Q7XQ MUTE SW
Q7XR MUTE SW
Q7XS MUTE SW
Q7XT MUTE SW
Q7XU MUTE SW
Q7XV MUTE SW
Q7XW MUTE SW
Q7XX MUTE SW
Q7XY MUTE SW
Q7XZ MUTE SW
Q7Y0 MUTE SW
Q7Y1 MUTE SW
Q7Y2 MUTE SW
Q7Y3 MUTE SW
Q7Y4 MUTE SW
Q7Y5 MUTE SW
Q7Y6 MUTE SW
Q7Y7 MUTE SW
Q7Y8 MUTE SW
Q7Y9 MUTE SW
Q7YA MUTE SW
Q7YB MUTE SW
Q7YC MUTE SW
Q7YD MUTE SW
Q7YE MUTE SW
Q7YF MUTE SW
Q7YG MUTE SW
Q7YH MUTE SW
Q7YI MUTE SW
Q7YJ MUTE SW
Q7YK MUTE SW
Q7YL MUTE SW
Q7YM MUTE SW
Q7YN MUTE SW
Q7YO MUTE SW
Q7YP MUTE SW
Q7YQ MUTE SW
Q7YR MUTE SW
Q7YS MUTE SW
Q7YT MUTE SW
Q7YU MUTE SW
Q7YV MUTE SW
Q7YW MUTE SW
Q7YX MUTE SW
Q7YY MUTE SW
Q7YZ MUTE SW
Q7Z0 MUTE SW
Q7Z1 MUTE SW
Q7Z2 MUTE SW
Q7Z3 MUTE SW
Q7Z4 MUTE SW
Q7Z5 MUTE SW
Q7Z6 MUTE SW
Q7Z7 MUTE SW
Q7Z8 MUTE SW
Q7Z9 MUTE SW
Q7ZA MUTE SW
Q7ZB MUTE SW
Q7ZC MUTE SW
Q7ZD MUTE SW
Q7ZE MUTE SW
Q7ZF MUTE SW
Q7ZG MUTE SW
Q7ZH MUTE SW
Q7ZI MUTE SW
Q7ZJ MUTE SW
Q7ZK MUTE SW
Q7ZL MUTE SW
Q7ZM MUTE SW
Q7ZN MUTE SW
Q7ZO MUTE SW
Q7ZP MUTE SW
Q7ZQ MUTE SW
Q7ZR MUTE SW
Q7ZS MUTE SW
Q7ZT MUTE SW
Q7ZU MUTE SW
Q7ZV MUTE SW
Q7ZW MUTE SW
Q7ZX MUTE SW
Q7ZY MUTE SW
Q7ZZ MUTE SW
Q800 MUTE SW
Q801 MUTE SW
Q802 MUTE SW
Q803 MUTE SW
Q804 MUTE SW
Q805 MUTE SW
Q806 MUTE SW
Q807 MUTE SW
Q808 MUTE SW
Q809 MUTE SW
Q80A MUTE SW
Q80B MUTE SW
Q80C MUTE SW
Q80D MUTE SW
Q80E MUTE SW
Q80F MUTE SW
Q80G MUTE SW
Q80H MUTE SW
Q80I MUTE SW
Q80J MUTE SW
Q80K MUTE SW
Q80L MUTE SW
Q80M MUTE SW
Q80N MUTE SW
Q80O MUTE SW
Q80P MUTE SW
Q80Q MUTE SW
Q80R MUTE SW
Q80S MUTE SW
Q80T MUTE SW
Q80U MUTE SW
Q80V MUTE SW
Q80W MUTE SW
Q80X MUTE SW
Q80Y MUTE SW
Q80Z MUTE SW
Q810 MUTE SW
Q811 MUTE SW
Q812 MUTE SW
Q813 MUTE SW
Q814 MUTE SW
Q815 MUTE SW
Q816 MUTE SW
Q817 MUTE SW
Q818 MUTE SW
Q819 MUTE SW
Q81A MUTE SW
Q81B MUTE SW
Q81C MUTE SW
Q81D MUTE SW
Q81E MUTE SW
Q81F MUTE SW
Q81G MUTE SW
Q81H MUTE SW
Q81I MUTE SW
Q81J MUTE SW
Q81K MUTE SW
Q81L MUTE SW
Q81M MUTE SW
Q81N MUTE SW
Q81O MUTE SW
Q81P MUTE SW
Q81Q MUTE SW
Q81R MUTE SW
Q81S MUTE SW
Q81T MUTE SW
Q81U MUTE SW
Q81V MUTE SW
Q81W MUTE SW
Q81X MUTE SW
Q81Y MUTE SW
Q81Z MUTE SW
Q820 MUTE SW
Q821 MUTE SW
Q822 MUTE SW
Q823 MUTE SW
Q824 MUTE SW
Q825 MUTE SW
Q826 MUTE SW
Q827 MUTE SW
Q828 MUTE SW
Q829 MUTE SW
Q82A MUTE SW
Q82B MUTE SW
Q82C MUTE SW
Q82D MUTE SW
Q82E MUTE SW
Q82F MUTE SW
Q82G MUTE SW
Q82H MUTE SW
Q82I MUTE SW
Q82J MUTE SW
Q82K MUTE SW
Q82L MUTE SW
Q82M MUTE SW
Q82N MUTE SW
Q82O MUTE SW
Q82P MUTE SW
Q82Q MUTE SW
Q82R MUTE SW
Q82S MUTE SW
Q82T MUTE SW
Q82U MUTE SW
Q82V MUTE SW
Q82W MUTE SW
Q82X MUTE SW
Q82Y MUTE SW
Q82Z MUTE SW
Q830 MUTE SW
Q831 MUTE SW
Q832 MUTE SW
Q833 MUTE SW
Q834 MUTE SW
Q835 MUTE SW
Q836 MUTE SW
Q837 MUTE SW
Q838 MUTE SW
Q839 MUTE SW
Q83A MUTE SW
Q83B MUTE SW
Q83C MUTE SW
Q83D MUTE SW
Q83E MUTE SW
Q83F MUTE SW
Q83G MUTE SW
Q83H MUTE SW
Q83I MUTE SW
Q83J MUTE SW
Q83K MUTE SW
Q83L MUTE SW
Q83M MUTE SW
Q83N MUTE SW
Q83O MUTE SW
Q83P MUTE SW
Q83Q MUTE SW
Q83R MUTE SW
Q83S MUTE SW
Q83T MUTE SW
Q83U MUTE SW
Q83V MUTE SW
Q83W MUTE SW
Q83X MUTE SW
Q83Y MUTE SW
Q83Z MUTE SW
Q840 MUTE SW
Q841 MUTE SW
Q842 MUTE SW
Q843 MUTE SW
Q844 MUTE SW
Q845 MUTE SW
Q846 MUTE SW
Q847 MUTE SW
Q848 MUTE SW
Q849 MUTE SW
Q84A MUTE SW
Q84B MUTE SW
Q84C MUTE SW
Q84D MUTE SW
Q84E MUTE SW
Q84F MUTE SW
Q84G MUTE SW
Q84H MUTE SW
Q84I MUTE SW
Q84J MUTE SW
Q84K MUTE SW
Q84L MUTE SW
Q84M MUTE SW
Q84N MUTE SW
Q84O MUTE SW
Q84P MUTE SW
Q84Q MUTE SW
Q84R MUTE SW
Q84S MUTE SW
Q84T MUTE SW
Q84U MUTE SW
Q84V MUTE SW
Q84W MUTE SW
Q84X MUTE SW
Q84Y MUTE SW
Q84Z MUTE SW
Q850 MUTE SW
Q851 MUTE SW
Q852 MUTE SW
Q853 MUTE SW
Q854 MUTE SW
Q855 MUTE SW
Q856 MUTE SW
Q857 MUTE SW
Q858 MUTE SW
Q859 MUTE SW
Q85A MUTE SW
Q85B MUTE SW
Q85C MUTE SW
Q85D MUTE SW
Q85E MUTE SW
Q85F MUTE SW
Q85G MUTE SW
Q85H MUTE SW
Q85I MUTE SW
Q85J MUTE SW
Q85K MUTE SW
Q85L MUTE SW
Q85M MUTE SW
Q85N MUTE SW
Q85O MUTE SW
Q85P MUTE SW
Q85Q MUTE SW
Q85R MUTE SW
Q85S MUTE SW
Q85T MUTE SW
Q85U MUTE SW
Q85V MUTE SW
Q85W MUTE SW
Q85X MUTE SW
Q85Y MUTE SW
Q85Z MUTE SW
Q860 MUTE SW
Q861 MUTE SW
Q862 MUTE SW
Q863 MUTE SW
Q864 MUTE SW
Q865 MUTE SW
Q866 MUTE SW
Q867 MUTE SW
Q868 MUTE SW
Q869 MUTE SW
Q86A MUTE SW
Q86B MUTE SW
Q86C MUTE SW
Q86D MUTE SW
Q86E MUTE SW
Q86F MUTE SW
Q86G MUTE SW
Q86H MUTE SW
Q86I MUTE SW
Q86J MUTE SW
Q86K MUTE SW
Q86L MUTE SW
Q86M MUTE SW
Q86N MUTE SW
Q86O MUTE SW
Q86P MUTE SW
Q86Q MUTE SW
Q86R MUTE SW
Q86S MUTE SW
Q86T MUTE SW
Q86U MUTE SW
Q86V MUTE SW
Q86W MUTE SW
Q86X MUTE SW
Q86Y MUTE SW
Q86Z MUTE SW
Q870 MUTE SW
Q871 MUTE SW
Q872 MUTE SW
Q873 MUTE SW
Q874 MUTE SW
Q875 MUTE SW
Q876 MUTE SW
Q877 MUTE SW
Q878 MUTE SW
Q879 MUTE SW
Q87A MUTE SW
Q87B MUTE SW
Q87C MUTE SW
Q87D MUTE SW
Q87E MUTE SW
Q87F MUTE SW
Q87G MUTE SW
Q87H MUTE SW
Q87I MUTE SW
Q87J MUTE SW
Q87K MUTE SW
Q87L MUTE SW
Q87M MUTE SW
Q87N MUTE SW
Q87O MUTE SW
Q87P MUTE SW
Q87Q MUTE SW
Q87R MUTE SW
Q87S MUTE SW
Q87T MUTE SW
Q87U MUTE SW
Q87V MUTE SW
Q87W MUTE SW
Q87X MUTE SW
Q87Y MUTE SW
Q87Z MUTE SW
Q880 MUTE SW
Q881 MUTE SW
Q882 MUTE SW
Q883 MUTE SW
Q884 MUTE SW
Q885 MUTE SW
Q886 MUTE SW
Q887 MUTE SW
Q888 MUTE SW
Q889 MUTE SW
Q88A MUTE SW
Q88B MUTE SW
Q88C MUTE SW
Q88D MUTE SW
Q88E MUTE SW
Q88F MUTE SW
Q88G MUTE SW
Q88H MUTE SW
Q88I MUTE SW
Q88J MUTE SW
Q88K MUTE SW
Q88L MUTE SW
Q88M MUTE SW
Q88N MUTE SW
Q88O MUTE SW
Q88P MUTE SW
Q88Q MUTE SW
Q88R MUTE SW
Q88S MUTE SW
Q88T MUTE SW
Q88U MUTE SW
Q88V MUTE SW
Q88W MUTE SW
Q88X MUTE SW
Q88Y MUTE SW
Q88Z MUTE SW
Q890 MUTE SW
Q891 MUTE SW
Q892 MUTE SW
Q893 MUTE SW
Q894 MUTE SW
Q895 MUTE SW
Q896 MUTE SW
Q897 MUTE SW
Q898 MUTE SW
Q899 MUTE SW
Q89A MUTE SW
Q89B MUTE SW
Q89C MUTE SW
Q89D MUTE SW
Q89E M

Ref. No.	Part No.	Description			Remark
C14	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C15	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C16	1-126-157-11	ELECT	10uF	20%	16V
C17	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C18	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C19	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C20	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C21	1-164-346-11	CERAMIC CHIP	1uF		16V
C22	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C23	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C24	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C25	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C26	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C27	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C28	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C29	1-124-234-00	ELECT	22uF	20%	16V
C30	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C31	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C32	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C61	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C62	1-126-161-11	ELECT	2.2uF	20%	50V
C66	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
				(US, Canadian)	
C66	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V (E)
C71	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C72	1-126-161-11	ELECT	2.2uF	20%	50V
C76	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
				(US, Canadian)	
C76	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V (E)
C81	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
				(US, Canadian)	
C81	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V (E)
C82	1-124-463-00	ELECT	0.1uF	20%	50V
				(US, Canadian)	
C82	1-124-464-11	ELECT	0.22uF	20%	50V (E)
C91	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C92	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C101	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C102	1-104-534-11	FILM CHIP	390PF	5%	50V
C103	1-104-534-11	FILM CHIP	390PF	5%	50V
C104	1-136-153-00	FILM	0.01uF	5%	50V
C105	1-104-941-11	ELECT	0.47uF	20%	50V
C106	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C107	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C108	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C109	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C110	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C111	1-126-294-11	ELECT	4.7uF	20%	35V
C151	1-126-294-11	ELECT	4.7uF	20%	35V

Ref. No.	Part No.	Description			Remark
C152	1-126-294-11	ELECT	4.7uF	20%	35V
C153	1-104-952-11	ELECT	22uF	20%	16V
C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C155	1-104-563-11	FILM CHIP	0.1uF	5%	16V
C156	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C157	1-104-951-11	ELECT	10uF	20%	16V
C158	1-104-547-11	FILM CHIP	0.0047uF	5%	16V
C159	1-104-951-11	ELECT	10uF	20%	16V
C160	1-136-169-00	FILM	0.22uF	5%	50V
C161	1-104-952-11	ELECT	22uF	20%	16V
C162	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C171	1-126-294-11	ELECT	4.7uF	20%	35V
C172	1-126-294-11	ELECT	4.7uF	20%	35V
					(C620)
C173	1-126-294-11	ELECT	4.7uF	20%	35V
C174	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
					(C620)
C175	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C176	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
					(C620)
C181	1-126-294-11	ELECT	4.7uF	20%	35V
C182	1-126-294-11	ELECT	4.7uF	20%	35V
					(C620)
C183	1-126-294-11	ELECT	4.7uF	20%	35V
C184	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
					(C620)
C185	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C186	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C193	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
					(C620)
C201	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C202	1-104-534-11	FILM CHIP	390PF	5%	50V
C203	1-104-534-11	FILM CHIP	390PF	5%	50V
C204	1-136-153-00	FILM	0.01uF	5%	50V
C205	1-104-941-11	ELECT	0.47uF	20%	50V
C206	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C207	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C208	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C209	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C210	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C211	1-126-294-11	ELECT	4.7uF	20%	35V
C251	1-126-294-11	ELECT	4.7uF	20%	35V
C252	1-126-294-11	ELECT	4.7uF	20%	35V
C253	1-104-952-11	ELECT	22uF	20%	16V
C254	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C255	1-104-563-11	FILM CHIP	0.1uF	5%	16V
C256	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C257	1-104-951-11	ELECT	10uF	20%	16V
C258	1-104-547-11	FILM CHIP	0.0047uF	5%	16V
C259	1-104-951-11	ELECT	10uF	20%	16V

MAIN

Ref. No.	Part No.	Description			Remark
C260	1-136-169-00	FILM	0.22uF	5%	50V
C261	1-104-952-11	ELECT	22uF	20%	16V
C262	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C271	1-126-294-11	ELECT	4.7uF	20%	35V
C272	1-126-294-11	ELECT	4.7uF	20%	35V (C620)
C273	1-126-294-11	ELECT	4.7uF	20%	35V
C274	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (C620)
C275	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C276	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (C620)
C281	1-126-294-11	ELECT	4.7uF	20%	35V
C282	1-126-294-11	ELECT	4.7uF	20%	35V (C620)
C283	1-126-294-11	ELECT	4.7uF	20%	35V
C284	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (C620)
C285	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C286	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C293	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (C620)
C301	1-126-301-11	ELECT	1uF	20%	50V
C302	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C303	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C304	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C305	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C307	1-124-463-00	ELECT	0.1uF	20%	50V
C308	1-126-277-11	ELECT	100uF	20%	10V
C309	1-126-157-11	ELECT	10uF	20%	16V
C310	1-126-157-11	ELECT	10uF	20%	16V
C311	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C331	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C332	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C333	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C334	1-126-157-11	ELECT	10uF	20%	16V
C336	1-124-234-00	ELECT	22uF	20%	16V
C337	1-126-934-11	ELECT	220uF	20%	16V
C351	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C352	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C353	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C354	1-104-952-11	ELECT	22uF	20%	16V
C355	1-126-277-11	ELECT	100uF	20%	10V
C356	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C357	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C358	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C359	1-104-952-11	ELECT	22uF	20%	16V
C360	1-104-952-11	ELECT	22uF	20%	16V

Ref. No.	Part No.	Description			Remark
C371	1-164-232-11	CERAMIC CHIP	0.01uF		50V (C620)
C372	1-104-952-11	ELECT	22uF	20%	16V (C620)
C374	1-163-077-11	CERAMIC CHIP	0.1uF		50V (C620)
C381	1-164-232-11	CERAMIC CHIP	0.01uF		50V (C620)
C382	1-104-952-11	ELECT	22uF	20%	16V (C620)
C384	1-163-077-11	CERAMIC CHIP	0.1uF		50V
C392	1-163-077-11	CERAMIC CHIP	0.1uF		50V (C620)
C393	1-126-277-11	ELECT	100uF	20%	10V (C620)
C501	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C502	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C503	1-126-157-11	ELECT	10uF	20%	16V
C504	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C505	1-164-346-11	CERAMIC CHIP	1uF		16V
C541	1-124-234-00	ELECT	22uF	20%	16V
C542	1-126-160-11	ELECT	1uF	20%	50V
C552	1-125-705-11	DOUBLE LAYERS	0.22F		5.5V
C553	1-128-057-11	ELECT	330uF	20%	6.3V
C554	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C555	1-124-463-00	ELECT	0.1uF	20%	50V
C556	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C557	1-126-160-11	ELECT	1uF	20%	50V
C558	1-163-077-11	CERAMIC CHIP	0.1uF		50V
C559	1-163-077-11	CERAMIC CHIP	0.1uF		50V
C560	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C561	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C562	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C571	1-124-257-00	ELECT	2.2uF	20%	50V
C572	1-163-077-11	CERAMIC CHIP	0.1uF		50V
C573	1-126-934-11	ELECT	220uF	20%	16V
C585	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C603	1-126-163-11	ELECT	4.7uF	20%	50V
C604	1-126-157-11	ELECT	10uF	20%	16V
C605	1-124-234-00	ELECT	22uF	20%	16V
C606	1-128-195-11	ELECT	39uF	20%	25V
C607	1-126-277-11	ELECT	100uF	20%	10V
C608	1-124-589-11	ELECT	47uF	20%	16V
C609	1-124-589-11	ELECT	47uF	20%	16V
C651	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C652	1-124-257-00	ELECT	2.2uF	20%	50V
C701	1-126-294-11	ELECT	4.7uF	20%	35V
C702	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C703	1-136-165-00	FILM	0.1uF	5%	50V
C704	1-136-165-00	FILM	0.1uF	5%	50V

Ref. No.	Part No.	Description			Remark
C705	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C711	1-126-294-11	ELECT	4.7uF	20%	35V
C712	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C713	1-136-165-00	FILM	0.1uF	5%	50V
C714	1-136-165-00	FILM	0.1uF	5%	50V
C715	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C721	1-126-294-11	ELECT	4.7uF	20%	35V
C722	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C723	1-136-165-00	FILM	0.1uF	5%	50V
C724	1-136-165-00	FILM	0.1uF	5%	50V
C725	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C731	1-126-294-11	ELECT	4.7uF	20%	35V
C732	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C733	1-136-165-00	FILM	0.1uF	5%	50V
C734	1-136-165-00	FILM	0.1uF	5%	50V
C735	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C751	1-124-584-00	ELECT	100uF	20%	10V
C761	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C771	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C781	1-111-233-11	ELECT	5600uF	20%	16V
C782	1-136-173-00	FILM	0.47uF	5%	50V
C783	1-104-951-11	ELECT	10uF	20%	16V
C784	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C785-787					
	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C788	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C791	1-163-077-11	CERAMIC CHIP	0.1uF		50V
C908	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C909	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C910	1-163-063-00	CERAMIC CHIP	0.022uF	10%	50V
C911	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C912	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C913	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C914	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C999	1-126-157-11	ELECT	10uF	20%	16V

< CONNECTOR >

CNJ571	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)
CNP301	1-766-260-11	CONNECTOR, FFC/FPC (ZIF) 7P
* CNP331	1-506-995-11	PIN, CONNECTOR (PC BOARD) 13P
CNP781	1-764-426-11	PLUG, CONNECTOR 15P
CNP791	1-770-284-11	PLUG, CONNECTOR (PC BOARD) 12P
CNP851	1-764-422-11	PLUG, CONNECTOR 12P

< DISCHARGE GAP >

CP1	1-519-504-11	GAP, DISCHARGE

Ref. No.	Part No.	Description		Remark
		< DIODE >		
D3	8-719-040-04	DIODE	MA721WK-(TX)	
D4	8-719-422-49	DIODE	MA8056-L	
D21	8-719-422-97	DIODE	MA8091-M	
D301	8-719-404-46	DIODE	MA110	
D331	8-719-034-63	DIODE	MA4091-H(QZ)	
D332	8-719-050-86	DIODE	1SS133T-91S	
D502	8-719-404-46	DIODE	MA110	
D503	8-719-801-78	DIODE	1SS184	
D504	8-719-801-78	DIODE	1SS184	
D543	8-719-034-22	DIODE	MA4039-M(QZ)	
D544	8-719-404-46	DIODE	MA110	
D551	8-719-404-46	DIODE	MA110	
D552	8-719-041-79	DIODE	MA721WA-TX	
D553	8-719-400-20	DIODE	MA152WA	
D554	8-719-034-46	DIODE	MA4062-M(QZ)	
D555	8-719-034-46	DIODE	MA4062-M(QZ)	
D561	8-719-034-46	DIODE	MA4062-M(QZ)	
D562	8-719-034-46	DIODE	MA4062-M(QZ)	
D563	8-719-034-46	DIODE	MA4062-M(QZ)	
D564	8-719-404-46	DIODE	MA110	
D571	8-719-034-46	DIODE	MA4062-M(QZ)	
D572	8-719-034-49	DIODE	MA4068-L(QZ)	
D573	8-719-034-46	DIODE	MA4062-M(QZ)	
D574	8-719-034-46	DIODE	MA4062-M(QZ)	
D575	8-719-050-86	DIODE	1SS133T-91S	
D602	8-719-022-90	DIODE	MA8160-M	
D603	8-719-422-64	DIODE	MA8062-M	
D605	8-719-404-46	DIODE	MA110 (C620)	
D651	8-719-034-66	DIODE	MA4100-M(QZ)	
D652	8-719-034-46	DIODE	MA4062-M(QZ)	
D654	8-719-034-46	DIODE	MA4062-M(QZ)	
D655	8-719-034-46	DIODE	MA4062-M(QZ)	
D656	8-719-034-46	DIODE	MA4062-M(QZ)	
D657	8-719-034-46	DIODE	MA4062-M(QZ)	
D701	8-719-053-18	DIODE	1SR154-400TE-25	
D711	8-719-053-18	DIODE	1SR154-400TE-25	
D751	8-719-050-86	DIODE	1SS133T-91S	
D781	8-719-034-46	DIODE	MA4062-M(QZ)	
D782	8-719-034-98	DIODE	MA4200-M(QZ)	
D783	8-719-049-38	DIODE	1N5404TU	
D901	8-719-053-18	DIODE	1SR154-400TE-25	
D999	8-719-050-86	DIODE	1SS133T-91S	

< IC >

IC11	8-759-823-81	IC	LC7216M
IC21	8-759-242-66	IC	TC4W66F
IC301	8-759-160-99	IC	HA12174

MAIN

Ref. No.	Part No.	Description	Remark
IC331	8-759-823-87	IC LB1638M	
IC351	8-752-071-19	IC CXA1946Q	
IC352	8-759-711-85	IC NJM4580E-D	
IC371	8-759-262-37	IC TA2050F(EL) (C620)	
IC381	8-759-262-37	IC TA2050F(EL) (C620)	
IC501	8-759-339-48	IC uPD78058GC-043-3B9	
IC552	8-759-196-18	IC M62008FP-T1	
IC571	8-759-096-16	IC MM1175XFF	
IC601	8-759-182-75	IC BA3910B-V2	
IC781	8-759-260-77	IC HA13150A	
		< JACK >	
J1	1-764-808-11	JACK (ANTENNA)	
J561	1-566-822-11	JACK (REMOTE IN)	
		< JUMPER RESISTOR >	
JC1-7	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC9	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC10	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC12	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC14	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC61	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC71	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC171	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC172	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC181	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC182	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC191	1-216-295-00	CONDUCTOR, CHIP (2012)	(C620)
JC271	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC272	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC281	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC282	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC291	1-216-295-00	CONDUCTOR, CHIP (2012)	(C620)
JC371	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC381	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610)
JC501	1-216-295-00	CONDUCTOR, CHIP (2012)	(C610:US, Canadian)
JC502	1-216-295-00	CONDUCTOR, CHIP (2012)	(E)
JC571	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC651	1-216-295-00	CONDUCTOR, CHIP (2012)	
		< COIL >	
L3	1-414-146-31	INDUCTOR 2.2uH	
L4	1-414-146-31	INDUCTOR 2.2uH	
L11	1-410-509-11	INDUCTOR 10uH	
L31	1-410-196-11	INDUCTOR CHIP 2.2uH	
L501	1-410-509-11	INDUCTOR 10uH	
L901	1-412-010-41	INDUCTOR CHIP 22uH	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-421-22	TRANSISTOR UN2211 (E)	
Q3	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q4	8-729-421-22	TRANSISTOR UN2211 (E)	
Q21	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q22	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q81	8-729-424-70	TRANSISTOR UN2217	
Q171	8-729-920-21	TRANSISTOR DTC314TKH04	
Q181	8-729-920-21	TRANSISTOR DTC314TKH04	
Q271	8-729-920-21	TRANSISTOR DTC314TKH04	
Q281	8-729-920-21	TRANSISTOR DTC314TKH04	
Q331	8-729-015-11	TRANSISTOR 2SD1802FAST-TL	
Q332	8-729-424-08	TRANSISTOR UN2111	
Q334	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q501	8-729-421-22	TRANSISTOR UN2211	
Q502	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q503	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q505	8-729-421-22	TRANSISTOR UN2211	
Q541	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q542	8-729-424-08	TRANSISTOR UN2111	
Q543	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q551	8-729-424-08	TRANSISTOR UN2111	
Q552	8-729-424-08	TRANSISTOR UN2111	
Q572	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q603	8-729-421-22	TRANSISTOR UN2211	
Q604	8-729-424-18	TRANSISTOR UN2113 (C620)	
Q606	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q651	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q652	8-729-421-22	TRANSISTOR UN2211	
Q654	8-729-421-22	TRANSISTOR UN2211	
Q655	8-729-030-18	TRANSISTOR 2SD2525	
Q656	8-729-424-08	TRANSISTOR UN2111	
		< RESISTOR >	
R2	1-208-822-11	METAL GLAZE 47K 2% 1/10W	(E)
R3	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R4	1-208-806-11	METAL GLAZE 10K 2% 1/10W	
R5	1-218-760-11	METAL GLAZE 220K 2% 1/10W	
R6	1-216-699-11	METAL CHIP 100K 0.5% 1/10W	
R7	1-208-774-11	METAL GLAZE 470 2% 1/10W	
R8	1-208-806-11	METAL GLAZE 10K 2% 1/10W	
R9	1-216-667-11	METAL CHIP 4.7K 0.5% 1/10W	
R11	1-216-295-00	CONDUCTOR, CHIP (2012)	(US, Canadian)
R11	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	(E)
R12	1-216-659-11	METAL CHIP 2.2K 0.5% 1/10W	
R13	1-216-663-11	METAL CHIP 3.3K 0.5% 1/10W	
R14	1-208-806-11	METAL GLAZE 10K 2% 1/10W	

Ref. No.	Part No.	Description			Remark
R15	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R21	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R22	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R23	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R24	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R25	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R26	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R27	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R29	1-208-770-11	METAL GLAZE	330	2%	1/10W
R61	1-208-810-11	METAL GLAZE	15K	2%	1/10W (US, Canadian)
R61	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W (E)
R62	1-208-810-11	METAL GLAZE	15K	2%	1/10W (US, Canadian)
R62	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W (E)
R71	1-208-810-11	METAL GLAZE	15K	2%	1/10W (US, Canadian)
R71	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W (E)
R72	1-208-810-11	METAL GLAZE	15K	2%	1/10W (US, Canadian)
R72	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W (E)
R81	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W (US, Canadian)
R81	1-216-647-11	METAL CHIP	680	0.5%	1/10W (E)
R82	1-208-822-11	METAL GLAZE	47K	2%	1/10W (US, Canadian)
R82	1-208-814-11	METAL GLAZE	22K	2%	1/10W (E)
R101	1-218-764-11	METAL GLAZE	330K	2%	1/10W
R102	1-218-764-11	METAL GLAZE	330K	2%	1/10W
R103	1-208-812-11	METAL GLAZE	18K	2%	1/10W
R104	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R105	1-218-764-11	METAL GLAZE	330K	2%	1/10W
R106	1-208-814-11	METAL GLAZE	22K	2%	1/10W
R107	1-208-776-11	METAL GLAZE	560	2%	1/10W
R108	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R109	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R151	1-208-810-11	METAL GLAZE	15K	2%	1/10W
R152	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R153	1-208-810-11	METAL GLAZE	15K	2%	1/10W
R154	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R171	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R172	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R173	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R174	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R175	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R176	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R177	1-216-635-11	METAL CHIP	220	0.5%	1/10W (C620)
R181	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R182	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R183	1-216-635-11	METAL CHIP	220	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R184	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R185	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R186	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R187	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R201	1-218-764-11	METAL GLAZE	330K	2%	1/10W
R202	1-218-764-11	METAL GLAZE	330K	2%	1/10W
R203	1-208-812-11	METAL GLAZE	18K	2%	1/10W
R204	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R205	1-218-764-11	METAL GLAZE	330K	2%	1/10W
R206	1-208-814-11	METAL GLAZE	22K	2%	1/10W
R207	1-208-776-11	METAL GLAZE	560	2%	1/10W
R208	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R209	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R251	1-208-810-11	METAL GLAZE	15K	2%	1/10W
R252	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R253	1-208-810-11	METAL GLAZE	15K	2%	1/10W
R254	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R271	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R272	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R273	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R274	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R275	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R276	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R277	1-216-635-11	METAL CHIP	220	0.5%	1/10W (C620)
R281	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R282	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R283	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R284	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R285	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R286	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R287	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R301	1-208-812-11	METAL GLAZE	18K	2%	1/10W
R302	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R303	1-208-812-11	METAL GLAZE	18K	2%	1/10W
R304	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R305	1-218-764-11	METAL GLAZE	330K	2%	1/10W
R306	1-216-113-00	METAL CHIP	470K	5%	1/10W
R307	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R331	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R332	1-220-149-11	METAL GLAZE	2.2	10%	1/2W
R333	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R334	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R351	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R352	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R353	1-208-814-11	METAL GLAZE	22K	2%	1/10W
R354	1-208-814-11	METAL GLAZE	22K	2%	1/10W
R355	1-208-810-11	METAL GLAZE	15K	2%	1/10W
R356	1-208-810-11	METAL GLAZE	15K	2%	1/10W
R371	1-208-774-11	METAL GLAZE	470	2%	1/10W (C620)

MAIN

Ref. No.	Part No.	Description			Remark
R381	1-208-774-11	METAL GLAZE	470	2%	1/10W
R501	1-216-699-11	METAL CHIP	100K	0.5%	1/10W (E, C620)
R502	1-216-699-11	METAL CHIP	100K	0.5%	1/10W (US, Canadian)
R503	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R504	1-216-699-11	METAL CHIP	100K	0.5%	1/10W (E)
R505	1-216-687-11	METAL CHIP	33K	0.5%	1/10W (E)
R506	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R507	1-208-814-11	METAL GLAZE	22K	2%	1/10W
R508-513	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R514	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R515	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R516	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R517	1-218-760-11	METAL GLAZE	220K	2%	1/10W
R518	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R519	1-218-760-11	METAL GLAZE	220K	2%	1/10W
R520	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R521	1-208-814-11	METAL GLAZE	22K	2%	1/10W
R522	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R523	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R524	1-208-814-11	METAL GLAZE	22K	2%	1/10W
R525	1-208-814-11	METAL GLAZE	22K	2%	1/10W
R526	1-216-687-11	METAL CHIP	33K	0.5%	1/10W (C620)
R527	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R528	1-208-770-11	METAL GLAZE	330	2%	1/10W
R529	1-216-246-11	METAL GLAZE	100K	5%	1/8W
R530	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R531-533	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R535	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R536	1-216-246-11	METAL GLAZE	100K	5%	1/8W
R537	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R542	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R551-553	1-208-806-11	METAL GLAZE	10K	0.50%	1/10W
R554	1-208-774-11	METAL GLAZE	470	2%	1/10W
R555	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R556	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R557	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R561	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R562	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R563	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R571	1-211-952-11	METAL GLAZE	10	2%	1/10W
R572	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R573	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R574	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R575	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R576	1-216-699-11	METAL CHIP	100K	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R601	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R604	1-208-822-11	METAL GLAZE	47K	2%	1/10W (C620)
R606	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R607	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R608	1-208-822-11	METAL GLAZE	47K	2%	1/10W
R651	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R652	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R660	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R661-664	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R665	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R666	1-216-627-11	METAL CHIP	100	0.5%	1/10W
R667	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R668	1-208-806-11	METAL GLAZE	10K	0.50%	1/10W
R669	1-208-806-11	METAL GLAZE	10K	0.50%	1/10W
R670	1-218-478-11	METAL GLAZE	330	5%	1/4W
R671	1-218-478-11	METAL GLAZE	330	5%	1/4W
R701	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W (C610)
R701	1-216-635-11	METAL CHIP	220	0.5%	1/10W (C620)
R702	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R703	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R704	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R711	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W (C610)
R711	1-216-635-11	METAL CHIP	220	0.5%	1/10W (C620)
R712	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R713	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R714	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R721	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W (C610)
R721	1-216-635-11	METAL CHIP	220	0.5%	1/10W (C620)
R722	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R723	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R724	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R731	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W (C610)
R731	1-216-635-11	METAL CHIP	220	0.5%	1/10W (C620)
R732	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R733	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R734	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R751	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R752	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R761	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R762	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R771	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R772	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R781	1-208-854-11	METAL GLAZE	1M	2%	1/10W
R782	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R783	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R784	1-208-806-11	METAL GLAZE	10K	2%	1/10W
R998	1-216-296-00	METAL CHIP	0	5%	1/8W

Ref. No.	Part No.	Description	Remark
		< NETWORK RESISTOR >	
RB501	1-239-426-11	NETWORK RESISTOR (CHIP) 2.2KX4	
		< VARIABLE RESISTOR >	
RV101	1-238-852-11	RES, ADJ, CERMET 470	
RV201	1-238-852-11	RES, ADJ, CERMET 470	
		< SWITCH >	
S501	1-571-478-11	SWITCH, SLIDE (POWER SELECT)	
S502	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT) (E)	
S551	1-692-431-21	SWITCH, TACTILE (RESET)	
S791	1-762-284-11	SWITCH, SLIDE (LINE OUT/IN SELECT) (C620)	
		< TUNER >	
TU1	A-3282-003-A	TUNER UNIT (TUX-001A)	
		< VIBRATOR >	
X11	1-577-126-51	VIBRATOR, CRYSTAL (7.2MHz)	
X501	1-760-489-11	VIBRATOR, CERAMIC (5MHz)	
X502	1-579-886-21	VIBRATOR, CRYSTAL (32.76kHz)	

9-959-949-81

Sony Corporation
Mobile Electronics Company

English
95F047037-1
Printed in Singapore
© 1995. 6

Published by Home A & V Products Div.
Quality Engineering Dept.